

AUTOMOBIL PRODUKTION

2020

Management. Factory. Tools.

TOP 100 Ranking

Die größten Zulieferer im exklusiven Faktencheck.
Wer sind die Gewinner und Verlierer 2020?

Kraftakt

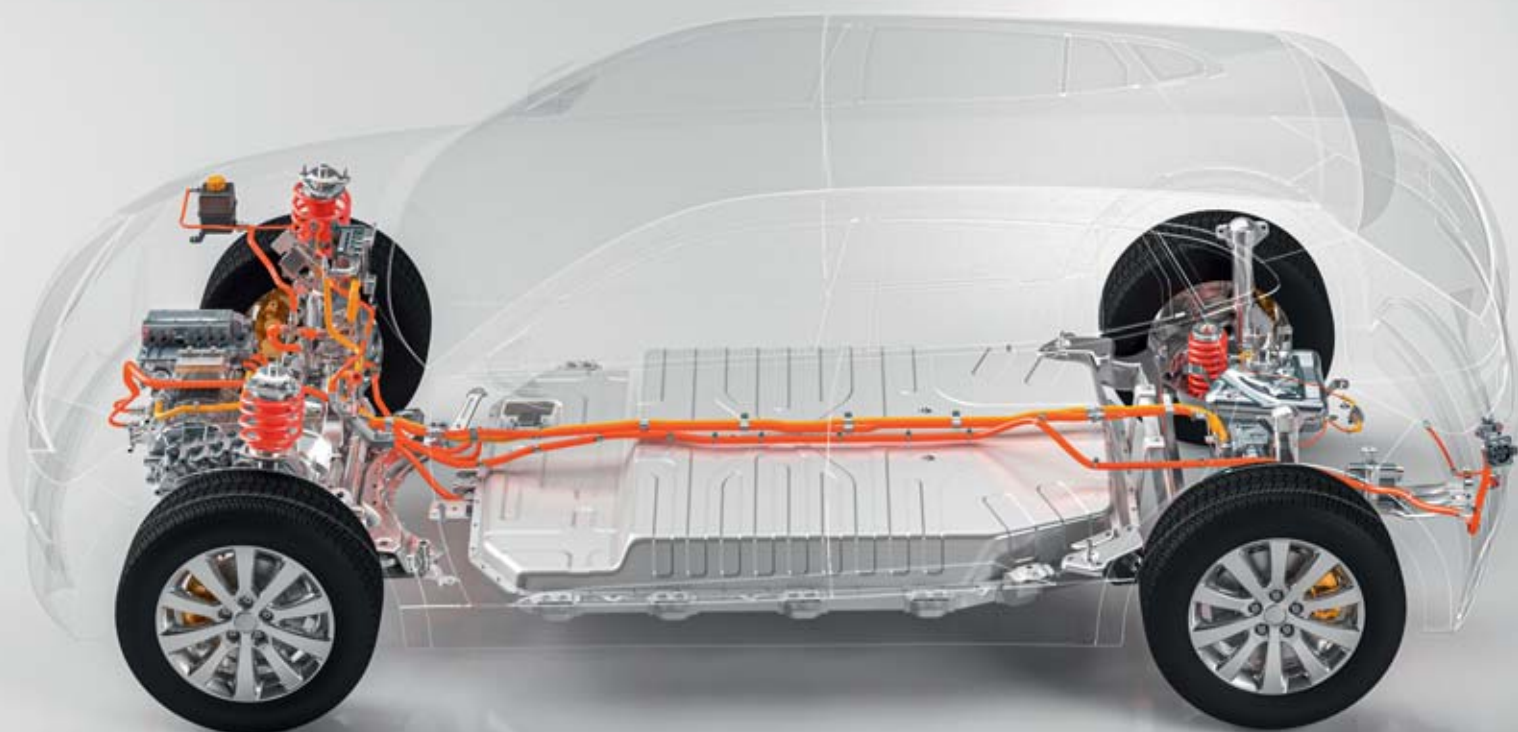
Die Branche ächzt unter den Auswirkungen der
Coronakrise. Der Blick geht jedoch Richtung Zukunft

Taktgeber

Viele Supplier treiben digitale Innovationen
im Bereich Infotainment und Licht voran

Im Interview

Continental-Vorstand
Nikolai Setzer



sponsored by: Roland Berger 

TOP 100: Automotive Suppliers Global Ranking 2020

VON A
NACH B
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KUNFT
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»Zulieferer müssen sich jetzt fokussieren«

Erneut präsentieren wir mit dem Automotive Suppliers Global Ranking TOP 100 ein wichtiges Standardwerk für die Branche. Es dokumentiert einmal mehr, dass die Automobilindustrie mit ihren tiefen, durchgängigen Wertschöpfungsketten eine wichtige Konjunkturstütze ist – besonders in Deutschland, aber auch in Europa und auf der ganzen Welt. Die für den Zahlenteil ausgewerteten Geschäftsberichte und Jahresabschlüsse spiegeln freilich noch die wirtschaftliche Situation vor Ausbruch der globalen Coronapandemie wider. Umso drastischer wirkt die Zäsur, die sich kein halbes Jahr später nach Shutdowns und Produktionsstopps abzeichnen beginnt. 2019 lag die EBIT-Marge bei den Automobilzulieferern durchschnittlich noch über sechs Prozent. Dieses Verdienstniveau ist nicht zu halten. Stand

heute gehen Marktexperten davon aus, dass 2020 weltweit nur rund 70 Millionen Fahrzeuge gefertigt werden. Vor allem in Europa und Nordamerika soll es zu signifikanten Einbrüchen der Nachfrage kommen. Um so wichtiger, dass sich die Zulieferer jetzt fokussieren – zum Beispiel auf eine konsequente Digitalisierung ihrer Produkte, Geschäftsprozesse und Lieferketten. Vor allem in der Produktion schlummert noch reichlich Potenzial. Produktivitätszuwachs ist durchaus möglich, wenn auch auf einem insgesamt niedrigerem Niveau. Conti-Vorstand Elmar Degenhart hat den Spirit, den es jetzt braucht, in einem Gastkommentar für das *Handelsblatt* treffend beschrieben: Ein Champion ist, wer gut spielt, wenn es schlecht läuft.

Ihre Redaktion



Rank 2020	Company	Sales 2019/20 in Mio. US \$	Rank Won/Lost 2019 vs. 2020	Rank 2019
1	Bosch	52.370	▶	1
2	Continental	46.205	▶	2
3	Denso	45.625	▶	3
4	Magna	39.431	▶	4
5	ZF	37.531	▶	5
6	Aisin Seiki	34.716	▶	6
7	Hyundai Mobis	32.637	▶	7
8	Bridgestone	27.006	▶	8
9	Valeo	21.803	▲	10
10	Huayu Automotive (Hasco)	20.849	▼	9
11	Michelin	20.484	▲	13
12	Faurecia	19.899	▶	12
13	Lear	19.810	▼	11
14	Tenneco	17.450	▲	26
15	Adient	16.526	▼	14
16	Sumitomo Electric	15.444	▼	15
17	Yazaki	15.168	▲	18
18	Marelli	14.999	▲	54
19	Goodyear	14.745	▼	16
20	Aptiv	14.357	▼	19
21	Weichai Power	14.244	▲	22
22	BASF	14.001	▼	21
23	Panasonic	13.598	▲	31
24	Mahle	13.488	▼	17
25	Toyota Boshoku	12.591	▼	24
26	Schaeffler	12.151	▼	23
27	ThyssenKrupp	11.738	▼	20
28	Cummins	10.640	▶	25
29	Plastic Omnium	10.279	▼	29
30	BorgWarner	10.168	▼	27
31	Gestamp	10.147	▼	28
32	Joysn Group	8.931	▲	35
33	JTEKT	8.858	▼	32
34	Yanfeng	8.800	▼	30
35	Dana	8.620	▲	37
36	Autoliv	8.548	▼	34
37	Hitachi	7.719	▼	33
38	Hella	7.378	▲	40
39	Toyoda Gosei	7.308	▲	42
40	Harman International	7.057	▲	46
41	GKN (Melrose Industries PLC)	7.047	▼	36
42	Sumitomo Rubber Industries	7.041	▲	47
43	Brose	6.907	▲	44
44	American Axle & Manufacturing	6.531	▲	45
45	Benteler	6.465	▼	43
46	Motherson Sumi	6.271	▼	41
47	Hanon Systems (HVCC)	6.137	▲	59
48	Koito Manufacturing	6.098	▲	50
49	PPG Industries	5.967	▲	53
50	Hankook Tires	5.904	▲	51

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51	Grupo Antolin	5.837	▼	48
52	TE Connectivity	5.686	▶	52
53	Eberspächer	5.593	▲	57
54	Pirelli	5.541	▲	55
55	Dräxlmaier	5.485	▲	58
56	Mitsubishi Electric	5.321	▲	60
57	NSK Group	5.264	▼	49
58	Freudenberg	5.193	▼	56
59	Mando	5.132	▲	62
60	Alps Electric (Alpine)	5.030	▲	61
61	Yokohama Rubber	4.793	▲	71
62	Leoni	4.450	▲	63
63	Delphi Technologies	4.361	▲	64
64	Mann+Hummel	4.263	▲	66
65	Linamar	4.247	▲	68
66	Futaba Industrial	4.224	▲	74
67	NXP Semiconductors	4.212	▲	75
68	Tokai Rika	4.201	▲	69
69	Webasto	4.142	▲	73
70	Nemak	4.019	▼	65
71	NTN	4.009	▼	67
72	IAC	4.000	▶	72
73	NHK Spring	3.969	▲	76
74	Infinion	3.921	▲	78
75	Illinois Tool Works	3.911	▼	70
76	CIE Automotive	3.874	▲	0
77	TI Automotive	3.818	▲	0
78	Nexteer	3.576	▼	77
79	Asahi Glass	3.562	▲	84
80	Hutchinson	3.506	▲	85
81	Sumitomo Riko Gruppe	3.466	▲	83
82	Toyo Tire & Rubber	3.462	▲	86
83	Saint Gobain	3.431	▲	88
84	Renesas	3.405	▼	82
85	Eaton	3.359	▼	79
86	Garrett Motion	3.248	▲	0
87	NGK Spark Plug	3.202	▲	89
88	TS Tech	3.201	▼	81
89	Cooper-Standard Automotive	3.108	▼	80
90	Rheinmetall Automotive	3.063	▼	87
91	Fuyao Glass	3.055	▲	92
92	Visteon	2.945	▲	93
93	Stanley Electric	2.935	▼	90
94	Martinrea International	2.912	▲	98
95	Sungwoo Hitech LTD	2.907	▼	91
96	Mitsuba	2.789	▶	96
97	Cooper Tire & Rubber	2.753	▲	99
98	SKF	2.581	▼	95
99	Nippon Sheet Glass	2.577	▼	97
100	Tachi-S	2.569	▼	94

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Die Macher

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ZF	37.531	5	▶

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Die Stunde der Wahrheit

Die Zuliefererindustrie schaltet abrupt in den Rückwärtsgang, baut Produktionskapazitäten ab und streicht Stellen. Sämtliche Wachstumspläne liegen auf Eis. Die Lage spitzt sich zu.



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▲ Brose meldet einen deutlichen Umsatz- und Ergebnisrückgang. ZF muss sich mit einer neuen Kreditlinie zusätzliche 1,35 Milliarden Euro Liquidität sichern. Continental rechnet bis auf Weiteres in allen Fahrzeugmärkten mit einem Produktionsniveau, das deutlich niedriger liegen wird als Ende 2017. Schaeffler sieht sich außer Stande, für das Restjahr eine verbindliche Prognose abzugeben und Bosch stellt sich auf eine globale Rezession ein – die Nachrichten von den großen deutschen Autozulieferern klangen schon mal besser. Klar, die weltweiten Produktionsunterbrechungen bei den Herstellern im Zuge der Corona-Pandemie haben zu erheblichen Auftragseinbrüchen geführt und wirken sich unmittelbar auf die Geschäftszahlen aus. Die Ursachen für die extrem angespannte Lage der Supplier aber liegen tiefer und reichen zwei, drei Jahre zurück. Bereits Ende 2017 war absehbar, dass sich das globale Fertigungsvolumen der Automobilindustrie verändern würde. Es gab gewaltige Überkapazitäten, die Profitabilität sank. „Die Industrie wurde nicht überrascht. Es war bereits länger erkennbar, dass der Markt nicht mehr Fahrzeuge braucht, sondern technologisch andere“, bestätigt Nikolai Setzer, Vorstandsmitglied und Sprecher des Automotive Boards bei Continental im Interview mit Automobil Produktion (ab Seite 14).

Die angespannte Lage verschärft sich durch Corona nun zusätzlich: Hatten manche Unternehmen bereits Schwächen in ihren Geschäftsprozessen oder hinkten bei technischen Entwicklungen hinterher, kam das in den letzten Monaten schonungslos ans Licht. „Jetzt werden alle Fehlentscheidungen der Vergangenheit und verkrustete Strukturen aufgedeckt“, sagt Elmar Kades von AlixPartner. In der Studie „Global Automotive Outlook 2020“ prognostiziert das Beratungsunternehmen, dass eine vollständige Erholung der Branche bis 2025 unwahrscheinlich ist. Die durch Covid-19-getriebene Rezession wird die Gesamtkapitalrendite im laufenden Jahr ins Negative stürzen lassen. Fünfzig große Hersteller und Zulieferer in den USA und in Europa haben bereits angekündigt, zusätzliche Schulden in Höhe von 72 Milliarden US-Dollar aufzunehmen. Das entspricht einem Anstieg um 23 Prozent gegenüber dem Vorjahr, in dem mit 318 Milliarden Dollar der Schuldenstand bereits auf Rekordhöhe geklettert war.

Auch die Zwischenbilanz, die Felix Mogge von der Unternehmensberatung Roland Berger für das Jahr 2020 zieht, fällt nicht gut aus (siehe Seite 10). „Wir reden derzeit über den dramatischsten Einbruch der Automobilindustrie seit dem zweiten Weltkrieg – und zwar in allen Segmenten: Automobilhersteller, Zulieferer, Handel. Jeder ist gleichsam betroffen.“ Das Hauptproblem: Entlang der gesamten automobilen Wertschöpfungskette stehen immer weniger Mittel aus dem laufenden Geschäft zur Verfügung. Um das Überleben der Unternehmen zu sichern, wird es zwangsläufig zu scharfen Kostensenkungen und Streichungen sowie einer Verschiebung von Investitionen kommen. Und das in einer Phase, in der die politisch gewollte Wende zur Elektromobilität große finanzielle wie personelle Ressourcen fordert. In der Kombi-

nation erscheinen die Folgen von Corona damit substanzieller als die wirtschaftlichen Auswirkungen der Finanzkrise 2008/2009. „Über kurz oder lang führt diese Situation zu Cash-Problemen bei den Zulieferern und voraussichtlich zu weiteren Insolvenzen, denn der Druck wächst unaufhörlich“, sagt Matthias Berg voraus, Partner der ASE Automotive Senior Experts GmbH. Er rät dazu, Lieferverträge und die Rechtslage genau zu prüfen. Das krisenbedingte Vorgehen der Fahrzeughersteller war nicht immer transparent – weder für die Zulieferer selbst, noch ihre finanzierenden Banken. Ob Werksschließungen mit Berufung auf höhere Gewalt und die damit verbundene Stornierung bestellter Ware rechtens war, müsse im Einzelfall geklärt werden, so Berg. Ebenso die Frage, wer schlussendlich die Vorfinanzierungskosten für Rohmaterialien, Halbfertigteile oder Konsignationslager trage.

Nikolai Setzer hofft darauf, dass sich die Branche zusammenrauft und die Unternehmen Solidarität zeigen. „Wir werden es nur gemeinsam schaffen, aus dieser Krise herauszukommen – dazu braucht es partnerschaftliche Zusammenarbeit, wie sie Continental mit den Herstellern pflegt und wie wir sie auch mit unseren Lieferanten pflegen. In einer solchen Phase darauf zu setzen, sich nur einseitig und kurzfristig zu optimieren, kann sich als Bumerang erweisen“, mahnt der Conti-Vorstand. Die Kräfte, die speziell an den Zulieferern

/ Zunehmend unattraktiv

Investments im Automobilsektor werden zum Risiko

Der weltweite Absatz von Fahrzeugen mit einem Gesamtgewicht bis zu sechs Tonnen ist in den ersten vier Monaten 2020 um 29,2 Prozent auf rund 21 Millionen Einheiten gesunken. Im April wurde mit einer Jahresrate von 49 Millionen Einheiten der niedrigste Monatswert in der Finanzkrise 2009 um rund sechs Millionen Einheiten unterschritten, konstatiert Frank Biller, Automotive-Analyst bei der Landesbank Baden-Württemberg. Die Märkte erwarten 2020 einen Rückgang der Automobilverkäufe um rund 20 Prozent, wobei die Prognoseunsicherheit weiterhin hoch bleibt. „Konjunkturprogramme dürften die Nachfrage kurz- bis mittelfristig stimulieren, reichen jedoch nicht aus, um die alten Niveaus schnell wieder zu erreichen“, so Biller. Zudem blieben die strukturellen Herausforderungen der Automobilindustrie bestehen: Die Branchentransformation mit dem Fokus auf elektrifizierte Fahrzeuge führe zu anhaltend hohen Investitionen und F&E-Aufwendungen. Gleichzeitig würden niedrigere Margen von E-Fahrzeugen auf die Ergebnisse drücken. Nach einer starken Ausweitung als Folge von COVID-19 ab März haben sich die Spreads im Automobilsektor zuletzt wieder deutlich eingeeengt. Die Sektor-Einschätzung der LBBW ist ein unmissverständliches Investmentssignal: untergewichten.

zerren, aber sind gewaltig und nur schwer im Zaum zu halten. Das Risiko, dass kleinere Sublieferanten ausfallen, steigt von Quartal zu Quartal. Analysten auf der ganzen Welt rechnen damit, dass die Zahl von Zulieferunternehmen mit Liquiditätsschwierigkeiten in der zweiten Jahreshälfte doppelt so hoch sein wird als während der Finanzkrise 2008/2009. Natürlich ist das finanzielle Fundament unterschiedlich belastbar. Bei vielen großen Tier-1-Lieferanten hinterlässt die Krise Bremsspuren in der Bilanz, der Fortbestand der Unternehmen aber steht nicht auf dem Spiel. „Das sieht bei dem einen oder anderen Mittelständler deutlich anders aus. Da sind die Kapitalreserven über das letzte Vierteljahr massiv zusammengeschmolzen“, warnt Felix Mogge von Roland Berger. Die aufgelegten Kredite und Finanzierungsmittel sieht er als zweischneidiges Schwert. „Kurzfristig ist eine solche Maßnahme zur Stabilisierung der Situation sinnvoll. Aber alle Kredite, die jetzt gewährt werden – sei es über die Kreditanstalt für Wiederaufbau oder über andere Finanzierungsmethoden – müssen in zwei, drei Jahren auch wieder zurückgeführt werden. Das werden nicht alle schaffen.“

In einer solchen Situation kommt es auf jeden Euro an. Bei der Vorfinanzierung von Warenlieferungen zum Beispiel arbeiten viele mittelständisch geprägte, kleine und inhabergeführte Zulieferbetriebe aber traditionell mit ihrer Hausbank zusammen. Sie kennen keine Alternativen und haben Nachholbedarf in puncto Konditionenvergleich. Genau darauf hat sich der Finanzdienstleister DFT Deutsche Finetrading im westfälischen Ladbergen spezialisiert. Das Handelshaus kauft Ware überall auf der Welt ein, bezahlt sie beim Produzenten umgehend und gewährt dem Abnehmer ein Zahlungsziel – bis zu sechs Monate bei Rohstoffen und Handelswaren, bei Maschinen oder anderen Investitionsgütern kann die Frist ein ganzes Jahr betragen. „Finetrading muss man als sinnvolle bankenunabhängige Ergänzung und als Baustein einer soliden Geschäftsfinanzierung sehen. Das Konzept basiert auf einem Handelsgeschäft, wird über das Zahlungsziel gesteuert und kann auf einfache und flexible Weise genutzt werden“, sagt DFT-Vorstand Dirk Oliver Haller. Er vergleicht Finetrading gerne mit Factoring und Leasing – beide Instrumente wirkten in den 1970-er Jahren exotisch, heute sind sie fester Bestandteil im unternehmerischen Finanzierungsmix. Die Handelsrestriktionen und Shutdowns im Frühjahr/Sommer 2020 haben gezeigt, wie anfällig die global weitverzweigten Lieferketten in der Automobilindustrie sind und was in den Fabriken passiert, wenn die Versorgung mit Rohstoffen, Bauteilen und Komponenten stockt oder gar ganz abreißt. Haller rechnet deshalb damit, dass Automobilhersteller und Zulieferer schon bald größere lokale Lagerbestände aufbauen. Im Fall einer zweiten Corona-Infektionswelle könnten sie helfen, Produktionsstillstände vier bis sechs Wochen lang zu vermeiden. Trotzdem mag sich dieses Horrorszenerario im Moment kein Manager vorstellen – die Konsequenzen wären für die gesamte Branche, die bereits unter den Folgen der ersten Welle zu leiden hat, existenzbedrohend.

Redakteur: Ralf Bretting



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Felix Mogge,
Senior Partner
Roland Berger

Die Automobilindustrie steht global unter Druck, auf die Hersteller und Zulieferer kommen schwere Zeiten zu. Im Interview analysiert Branchenexperte **Felix Mogge** von der Unternehmensberatung Roland Berger die wirtschaftlichen Konsequenzen der Coronakrise und zeigt verschiedene Handlungsoptionen auf

Herr Mogge, wie fällt Ihre Zwischenbilanz für das Jahr 2020 aus?

Nicht gut. Wir reden derzeit über den dramatischsten Einbruch der Automobilindustrie seit dem zweiten Weltkrieg – und zwar in allen Segmenten: Automobilhersteller, Zulieferer, Handel. Jeder ist gleichsam betroffen.

Lassen Sie uns über die Zulieferer sprechen ...

Auf der Zuliefererseite werden wir in Bezug auf die EBIT-Marge im laufenden Jahr vielleicht noch marginal positiv sein. Sie erinnern sich: 2019 lag die Marge noch über sechs Prozent, 2018 sogar noch bei über sieben. Selbst im schwächsten Jahr der Finanzkrise 2008/2009 wiesen die Unternehmen im Schnitt rund zwei Prozent EBIT-Rendite aus. Die werden wir aus unserer Sicht 2020 deutlich unterschreiten.

Können Sie Ihre Einschätzung mit einer Zahl konkretisieren?

Am Ende wird sich die EBIT-Marge wahrscheinlich zwischen null und einem Prozent bewegen. Und sollte das so kommen, können wir uns alle noch glücklich schätzen.

Mit welchen Produktionskapazitäten rechnen Sie vor diesem Hintergrund für das Jahr 2020?

Stand heute müssen wir davon ausgehen, dass weltweit lediglich rund 70 Millionen Fahrzeuge gefertigt werden. Vor allem in Europa und Nordamerika werden wir drastische Einbrüche erleben.

Einbrechende Gewinne sind die eine Seite der Medaille, massive Jobverluste bei den Zulieferern die andere. Wovon müssen wir ausgehen?

Nach den Diskussionen der letzten Monate dürfte allen klar sein, dass es mittelfristig zu einem Arbeitsplatzabbau kommen wird. Die eine oder andere Ankündigung hat es ja schon gegeben. Wenn die Krise in einer V-Form verläuft und die zweite Welle ausbleibt, kann viel durch die natürliche Fluktuation abgefangen werden. Arbeitgeber- und Arbeitnehmervertreter sind sich der Situation absolut bewusst und arbeiten im Ringen um eine Lösung gut zusammen. Klar ist: Die Beschäftigungsauswirkungen aus dem Shutdown sind in weiten Teilen über Kurzarbeitergeld, über Abbau von Zeitkonten und auch über Urlaubskonten abgefangen worden. Die Reserven sind damit


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aber im Wesentlichen aufgebraucht. Wenn wir jetzt einmal unterstellen, dass die Marktnachfrage auch im zweiten Halbjahr weiterhin unter Planniveau liegen wird, dann werden die Unternehmen – OEMs wie Zulieferer – gar nicht umhinkommen, verstärkt über strukturelle Maßnahmen zu reden

Wobei nicht alles auf Covid-19 zurückzuführen ist ...

In der Tat, es gab auch vor Covid-19 schon eine Reihe struktureller Hausaufgaben in der Industrie, bei einigen Zulieferern stärker als bei anderen. Covid-19 wirkt jetzt wie ein Brennglas, das viele Missstände noch deutlicher aufzeigt. Das ist aber auch eine Chance, um Themen anzupacken, die sonst wieder auf die lange Bank geschoben worden wären.

Experten haben berechnet, dass vor diesem Hintergrund drei bis sechs Automobilwerke in Europa wackeln. Teilen Sie diese Auffassung?

Sicherlich ist die Überkapazität offensichtlich, wenn wir in Europa 2019 rund 17 Millionen Fahrzeuge gebaut haben und in diesem Jahr vielleicht bei zwölf bis 13 Millionen landen werden. Trotzdem kann ich die Auffassung so nicht uneingeschränkt teilen, insbesondere wenn wir über die Kernwerke der einzelnen Hersteller reden. Früher oder später wird es zu einer Erholung des Marktes kommen – auch, wenn das nicht über Nacht passieren wird. Zudem ist die vollständige Schließung eines Werkes in aller Regel mit extrem hohen Kosten verbunden.

Sie sprechen die Phase einer Erholung an. Werden wir überhaupt nochmal solche Absatzzahlen sehen wie vor ein paar Jahren?

Grundsätzlich ist das möglich, sowohl für Europa als auch für Nordamerika. Der Bedarf an Mobilität reduziert sich ja nicht. Die technische Haltbarkeit von Fahrzeugen wird zwar grundsätzlich immer besser, aber letzten Endes gibt es dennoch einen gewissen Ersatzzyklus.

Wenn die Zulieferer nun so hart getroffen werden, welche Möglichkeiten bleiben Ihnen? Die Flucht in Partnerschaften, die Suche nach Investoren oder gar der Verkauf?

Zweifelsohne hat sich die finanzielle Situation der Zulieferer erheblich verschlechtert. Die Tragfähigkeit ist natürlich deutlich unterschiedlich. Bei vielen großen Tier-1 hinterlässt die Krise Bremspuren in der Bilanz, der Fortbestand des Unternehmens aber steht nicht auf dem Spiel. Das sieht bei dem einen oder anderen Mittelständler anders aus. Wenn die Kapitalreserven über das letzte Vierteljahr massiv zusammengeschnitten sind, helfen Partnerschaften nur in Grenzen. In so einem Fall sind auch die ausgelegten Kreditlinien und Corona-hilfen ein zweiseitiges Schwert. Kurzfristig ist eine solche Maßnahme zur Stabilisierung der Situation sinnvoll. Aber alle Kredite, die jetzt gewährt werden – sei es über die Kreditanstalt für Wiederaufbau oder über andere Finanzierungsmethoden – müssen in zwei, drei Jahren auch wieder zurückgeführt werden. Das werden nicht alle schaffen.



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Zur Person

Felix Mogge, Roland Berger

Felix Mogge ist Senior Partner bei der Unternehmensberatung Roland Berger und Experte für die Automobilzulieferindustrie. Seine Hauptgebiete umfassen Umstrukturierungen und Ergebnissteigerungsprogramme, M&A sowie Post-Merger-Integrationen.



► Branchenexperte Felix Mogge stellte sich den Fragen der Automobil Produktion in einem Videointerview

Eine Chance für strategische Übernahmen?

Sicherlich kann man sich strategische Transaktionen vorstellen, sei es der Zukauf einzelner Geschäftsaktivitäten oder die komplette Übernahme eines Wettbewerbers zu äußerst günstigen Marktpreisen.

Müssen wir davon ausgehen, dass insbesondere chinesische Unternehmen verstärkt auf Einkaufstour gehen?

Das ist sogar relativ wahrscheinlich. Wir sehen derzeit gerade im chinesischen Markt eine ganze Reihe von Bewegungen. Es gibt Unternehmen, die sich wieder intensiv mit der Übernahme von Wettbewerbern im europäischen Ausland beschäftigen und sich auch in Nordamerika umsehen.

Falls die Politik mitspielt ...

Es wird sehr entscheidend sein, wie sich die Politik dazu positioniert. Wir haben heute ein anderes geopolitisches Klima, als wir das vor zehn oder elf Jahren in der Finanzkrise hatten. Ausländische Übernahmen heimischer Unternehmen werden überall auf der Welt kritisch beäugt. Das ist in Europa so, das ist in Nordamerika so – und das betrifft nicht nur chinesische Investoren, sondern alle. Auch ein Investor aus Westeuropa wird sich kritischere Fragen gefallen lassen müssen, wenn er künftig beispielsweise in Nordamerika einen Wettbewerber übernehmen möchte.

In Asien und Europa ist die Produktion teilweise wieder angelaufen, wenn auch mit gedrossem Ausstoß. Wie lange wird es dauern, bis sich die Lieferketten wieder vollständig synchronisiert haben?

Die Synchronisation der Lieferketten hat im Wiederhochlauf

nach dem Shutdown in Summe gut funktioniert. Wir haben wenige Lieferabbrüche gesehen. Dabei muss man aber klar konstatieren, dass der echte Stresstest bis dato ausgeblieben ist. Wenn wir nach China schauen, sehen wir, dass eine Rückkehr auf ein annäherndes Normalniveau innerhalb von zirka sechs Wochen durchaus möglich ist.

Eine staatlich verordnete Rückkehr?

Nicht vollständig. Allerdings ist das Normalniveau, das wir in China heute sehen, nicht mehr vergleichbar mit dem Normalniveau des Spitzenjahres 2017. In China sind die Produktionskapazitäten auch vor Covid-19 deutlich unterausgelastet gewesen, weil wir vor zwei Jahren noch über ganz andere, deutlich höhere Produktionsvolumina geredet haben. Deswegen ist es jetzt mit allen notwendigen Arbeitssicherungsmaßnahmen relativ problemlos vonstattengegangen, wieder 80 Prozent des Normalniveaus zu erreichen. Klar ist aber auch: Stand heute treibt das Chinageschäft sowohl bei den OEMs als auch bei den Zulieferern die gesamtwirtschaftliche Entwicklung, weil sich dort die Produktionsvolumina im Gegensatz zu Europa und Nordamerika zumindest in der Nähe des Normalniveaus bewegen.

Was passiert, wenn es zu einer zweiten Welle und damit zu einem Jo-Jo-Effekt kommt?

Der würde vor allem die Zuliefererseite massiv treffen. Der erste Shutdown hat einen Großteil der Reserven, mit denen man einem solchen wirtschaftlichen Schock begegnen kann, nahezu aufgebraucht. Das hat wie gesagt vergleichsweise gut funktioniert – wenn man in so einer Situation überhaupt von „gut funktioniert“ sprechen kann. Diese Tragfähigkeit der Industrie ist bei einem zweiten Schock in derselben Größenordnung nicht mehr gegeben.

Wie wird der Erholungsprozess am Ende aussehen, wenn man ihn auf der Zeitachse betrachtet? Manche sagen optimistisch, es wird ein V sein, andere sprechen von einer U-Form, vielleicht auch ein L. Wie sieht das Roland Berger?

Wir halten das V, definiert als eine vollständige Erholung bis Jahresende, für relativ unwahrscheinlich. Jedenfalls auf globaler Ebene betrachtet. Ob es am Ende auf ein U oder ein L hinausläuft, ist aktuell schwer zu sagen. Dafür haben wir sowohl im gesamtwirtschaftlichen Kontext als auch bei den politischen Rahmenbedingungen noch zu große Unsicherheiten. Die Kernfrage lautet: Wie optimistisch blicken wir alle in die Zukunft? Denn das Auto ist grundsätzlich ein Produkt, das relativ stark auf die gesamtkonjunkturelle Einschätzung der Verbraucher und der Unternehmen reagiert.

Werden die tradierten Geschäftsmodelle der Automobilindustrie überhaupt noch Bestand haben?

Covid-19 ist ein Beschleuniger für viele Veränderungen, die in der Industrie in den letzten Jahren begonnen haben. Die Frage, wie schnell das passiert und in welche Richtung, hängt neben der gesamtwirtschaftlichen Entwicklung auch sehr stark davon ab, wie sich die Politik zur Automobilindustrie positioniert.

Will heißen?

Wir glauben, dass das Thema autonomes Fahren in seiner Entwicklung um Jahre zurückgeworfen wird. Wir glauben, dass es eine stärkere regionale Fokussierung der Liefer- und Wertschöpfungsketten geben wird. Insbesondere im Bereich der E-Mobilität könnte es aber einen Wachstumsschub geben: Nehmen Sie zum Beispiel den von der EU propagierten „Green New Deal“, der vermutlich mit den Krisengeldern der EU weiter forciert wird. Oder das von der Bundesregierung beschlossene Konjunkturpaket mit der expliziten Förderung von Ladeinfrastruktur, Wasserstoff und batterieelektrischen Fahrzeugen.

In den USA sehen wir derzeit einen entgegengesetzten Trend ...

Richtig. Wie sich die Politik letzten Endes positioniert, ist tatsächlich noch nicht endgültig entschieden. Insofern sind einige Entwicklungen über die nächsten Jahre noch schwer prognostizierbar. Relativ sicher ist: Wir werden in drei, vier Jahren auf ein Industriebild schauen, das deutlich anders aussieht als das des Jahres 2019.

Abseits von Corona bestehen weiterhin geopolitische Spannungen. Erleben wir zu Beginn der 2020er-Jahre**das Ende der Globalisierung, wie wir sie bisher kennen?**

Sicherlich wird Covid-19 dazu führen, dass wir das Rad der Globalisierung etwas langsamer drehen. Von einem Ende der Globalisierung kann aber aus unserer Sicht keine Rede sein. Eine weitgehende Renationalisierung von Industrien und Wertschöpfungsketten ist – wenn überhaupt möglich – massiv unwirtschaftlich. Das gilt nicht nur für die Automobilbranche, sondern auch für viele andere Industrie-segmente. Viele Kompetenzen, Produkte und Materialien sind in einigen Teilen der Welt ja überhaupt nicht verfügbar. Man kann lange darüber diskutieren, ob Deutschland seine eigene Seltene-Erden-Fertigung aufmachen möchte – wenn man das Material nicht im Boden hat, wird es nicht funktionieren.

Was erwartet uns dann?

Bei allen Nationalisierungstendenzen, die wir zweifelsohne in der politischen Landschaft sehen, bleibt es eine wirtschaftliche Frage. Deswegen glauben wir zwar, dass sich Lieferketten tendenziell an der einen oder anderen Stelle ein Stück weit verkürzen und geografisch konsolidieren werden.

Das Interview führten: Ralf Bretting und Hilmar Dunker

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»Der Markt braucht nicht mehr Fahrzeuge, sondern technologisch andere«

Nikolai Setzer
Vorstandsmitglied und Sprecher des Automotive Boards
Continental AG



Zulieferer Continental hat alle Hände voll zu tun: Branchentransformation, Abkehr von Benzin- und Dieselantrieben, die Folgen der Coronapandemie. Im Interview erläutert Vorstandsmitglied Nikolai Setzer, Sprecher des Automotive Boards, welcher Schuh sein Unternehmen zurzeit am stärksten drückt und mit welcher Strategie das Technologieunternehmen wieder in die Spur bringen soll.

Fotos: Robin Dunker / Continental

Herr Setzer, 2019 setzte die Zulieferindustrie zu einer wirtschaftlichen Talfahrt an. Zum größten Strukturwandel seit Jahrzehnten kommen jetzt obendrein die Folgen der weltweiten Corona-Pandemie. Ein weiterer Tiefschlag oder der Moment für ein prinzipielles Umdenken und Umlenken?

Tatsächlich war bereits Ende 2017 absehbar, dass sich das globale Fertigungsvolumen der Automobilindustrie verändern würde. Prompt ging die Produktion 2018 und 2019 zurück – und diese Situation hat sich nun durch die Folgen der Corona-Pandemie noch einmal deutlich verschärft. Das bekommen wir auf der Nachfrageseite ganz sicher noch einige Zeit zu spüren. Entscheidend aber ist: Die Industrie wurde nicht überrascht. Es war bereits länger erkennbar, dass der Markt nicht mehr Fahrzeuge braucht, sondern technologisch andere. Um Ihre Frage klar zu beantworten: Wir rechnen damit, dass sich die Produktion in allen Fahrzeugmärkten auf einem Niveau einpendeln wird, das niedriger liegt als Ende 2017. Deshalb steuern wir bei Continental ja bereits mit dem weltweiten Programm „Transformation 2019-2029“ gegen und unterstützen einen beschleunigten Umstieg auf neue Technologien.

An welchen Stellen machen Sie die größten Veränderungen fest?

Der Markt, die Komplexität und die Anforderungen an die Mobilität haben sich geändert. Am deutlichsten tritt die Transformation wohl im Bereich der Elektromobilität und bei der Veränderung der Antriebssysteme zutage. Die Transformation berührt aber auch die Serienproduktion analoger Anzeige- und Bedientechnologien – hier setzt sich die Digitalisierung im Cockpit mit großer Geschwindigkeit durch und insgesamt vor allem in der elektronischen Architektur durch Software dominierte Bereiche.

Verstanden. Aber glauben Sie, dass die bereits angekündigten Restrukturierungsmaßnahmen ausreichen? Sie sagten ja selbst, dass sich die Situation durch Corona nun noch einmal verschärft hat ...

Continental musste sich bereits Ende 2019 zu harten Einschnitten durchringen, um die Zukunftsfähigkeit des Unternehmens zu sichern. Wir werden unser Kostenniveau an das heutige und für die nächsten Jahre zu erwartende, verringerte weltweite Produktionsvolumen anpassen müssen. Dazu zählen einerseits unsere Produktionskosten und zum anderen unsere Fixkosten in allen Teilen des Unternehmens. Neben den Aktivitäten zur Kosteneinsparung wird die Absicherung der Zukunft auch durch unsere konsequente Ausrichtung auf profitable Wachstums- und strategisch wichtige Zukunftstechnologien unterstützt.

Viele Unternehmen in der Automobilindustrie verfolgen derzeit dasselbe Ziel: Aufholen, zurück zum Alltag vor dem Shutdown. Welche Herausforderungen sehen Sie auf diesem Weg?

Wir stecken noch mitten drin. Als sich das Coronavirus in China auszubreiten begann, stand die Zulieferindustrie dort schlagartig still. In der Folge hatten wir alle Hände voll zu tun, um unsere Lieferfähigkeit für die globale Fahrzeugproduktion aufrecht



Zur Person

Nikolai Setzer, Continental AG

20. April 1971 Geboren in Groß-Gerau

1990-1997 Studium Wirtschaftsingenieurwesen an den Universitäten Darmstadt und Bordeaux mit Diplomabschluss

1997 Eintritt in die Continental AG: Reifentestabteilung und Reifenentwicklung

1999-2004 Verschiedene Funktionen im Key Account Management Erstausrüstung und Produktentwicklung

2004-2007 Leiter Key Account Management Erstausrüstung für Europa, Asien, Nord- und Südamerika

2007-2008 Leiter des Geschäftsbereichs Erstausrüstung Pkw-Reifen

2008-2009 Leiter des Geschäftsbereichs Ersatzgeschäft Pkw-Reifen Europa und Afrika

2009 Leiter der Division Pkw-Reifen

August 2009 bis Juli 2011 Vorstandsmitglied Division Pkw-Reifen

August 2011 bis März 2019 Vorstandsmitglied Division Reifen, zusätzlich zuständig für Einkauf Konzern

August 2011 bis März 2019

Seit April 2019 Vorstandsmitglied der Continental AG und Sprecher des Automotive Boards

zu erhalten. Dann drehte sich das Blatt, Europa und die Region Amerika erlebten einen Shutdown, während China wieder anfang zu produzieren. In den letzten Wochen galt es, wichtige Komponenten und Teile für China zur Verfügung zu stellen und gleichzeitig den Ramp-up in Europa zu managen, Upstream wie Downstream. Eine so komplexe Situation hatten wir bisher in keiner Krise zu meistern. Sie hat uns vor Augen geführt, wie stark alle Unternehmen in der automobilen Wertschöpfung international aufeinander angewiesen und im Netzwerk verbunden sind.

Die Lieferketten sind derzeit längst nicht so stabil wie vor dem Shutdown. Was würde passieren, wenn nochmals restriktive Maßnahmen nötig wären, um die Verbreitung des Virus einzudämmen?

Das ist eine hypothetische Frage, die sich nur schwer beantwor-

ten lässt. Continental konnte die Lieferschwierigkeiten im ersten Quartal bis in den April hinein gut bewältigen – und wir reden hier über zigtausend Komponenten, die wir in unterschiedlichen Kombinationen für unsere Produktion zusammenbringen müssen. Ich persönlich habe mit deutlich mehr Unterbrechungen in den globalen Warenströmungen gerechnet, aber es hat branchenweit außerordentlich gut funktioniert. Mit den Erfahrungen, die wir gemacht haben, sehe ich Continental nun noch besser vorbereitet. Aber ganz ehrlich: Einen erneuten globalen Shutdown wollen wir uns lieber nicht vorstellen.

Als Sprecher des Automotive Boards sind Sie bei Continental für die einheitliche Ausrichtung der Geschäftspolitik in diesem Bereich verantwortlich. Welcher Schuh drückt Sie zurzeit am stärksten?

Wir erleben eine Nachfrage- und eine Angebotskrise gleichermaßen, und das in den wichtigsten Absatzregionen weltweit. So etwas haben wir noch nicht erlebt und auch noch nicht gemanagt. Wenn Sie mich fragen, wo die Herausforderungen derzeit am größten sind, lautet meine Antwort: im operativen Geschäft. Wir müssen unsere Mitarbeiter schützen, Kosten managen und gleichzeitig die Belieferung unserer Kunden garantieren. Zudem dürfen wir unsere strategische Ausrichtung und wichtige Projekte nicht aus den Augen verlieren und müssen sie weiter vorantreiben.

Fürchten Sie einen technologischen Stillstand bei Continental?

Natürlich müssen wir unsere Strukturen den Marktbedingungen anpassen. Aber Continental ist und bleibt ein Technologieunternehmen. Wir haben uns in den letzten Jahren zielgerichtet durch Zukäufe verstärkt, zum Beispiel in den Bereichen Embedded Software und Cybersecurity. Konsequenterweise integrieren wir nun diese Technologien in unsere Produkte und verzahnen das Knowhow im Automotive-Bereich. Continental wird zudem weiterhin in der Startup-Szene aktiv vertreten bleiben und nach sinnvollen Kooperationen Ausschau halten, selbst wenn wir jetzt eine Phase durchlaufen, in der wir – wie andere Unternehmen auch – erst einmal die Krise zu managen haben. Was wir an Technologien haben, werden wir ordentlich in den Markt einführen und an der einen oder anderen Stelle auch Investitionen zurückfahren.

Mit Ihrer Bestellung im April 2019 war die Erwartung verbunden, dass Sie das Wachstumspotenzial auf wichtigen Geschäftsfeldern der Zukunft voll erschließen. Wo steht Continental ein Jahr später?

Wir haben das Jahr 2019 genutzt, um uns im Automotive-Bereich neu auszurichten und zu organisieren. Denken Sie zum Beispiel an den Carve out und vorbereiteten Spin-off der Antriebssparte Vitesco oder die Zusammenführung der Divisionen Interior und Chassis & Safety unter dem neuen Dach der neuen Automotive Technologies. Starke Zentralfunktionen, wie unter anderem eine zentrale Engineering-Einheit, unterstützen beispielsweise bei Software-Architekturen und Systementwicklung. Dieser Strategieprozess ist noch nicht final abgeschlossen und läuft bis Ende dieses Jahres. Dann schauen wir, was wir gegebenenfalls anpassen müssen.

Womit wollen Sie künftig Umsatz und Rendite machen?

Wir haben sechs strategische Aktionsfelder definiert, auf denen Continental nachweislich stark ist und auf denen wir eine entsprechende Nachfrage erwarten. Eines davon ist die automatisierte beziehungsweise autonome Mobilität. Klar wird die Umsetzung der höheren Fahrstufen vier und fünf mehr Zeit brauchen, als ursprünglich erwartet. Aber das liegt nicht an der technischen Entwicklung, sondern eher an den regulatorischen Randbedingungen und der Frage, wie viel Geld Autokäufer für solche Features ausgeben wollen. Im Moment stimmt einfach das Nutzen-Kosten-Verhältnis noch nicht. Aber alle Hersteller arbeiten intensiv daran, automatisiertes Fahren auf Level 2+ serienreif zu machen.

Welche Aktionsfelder spielen außerdem eine Rolle?

Der Bogen spannt sich von Smart Mobility und Nutzererlebnis über das große Feld der Fahrsicherheit bis hin zur Entwicklung von Software und System Excellence sowie der Gestaltung neuer E/E-Architekturen und Konnektivität, mit denen sich eine ganzheitliche Vernetzung realisieren lässt – nicht nur im Fahrzeug selbst, sondern mit der gesamten Mobilitätsinfrastruktur.

Die verfügbaren Mittel für Investitionen sollen bei Continental um mindestens 20 Prozent sinken. Wir wirkt sich das in Ihrem Bereich aus?

Wir passen die Höhe unserer Investitionen an die Auftragslage an. Analysten zufolge soll 2020 die weltweite Fahrzeugproduktion im Vergleich zum Vorjahr um rund ein Viertel niedriger liegen. Das kommt für Continental automatisch einem rückläufigen Komponenten- und Teileabruf gleich – es werden eben einfach weniger Autos gebaut. Diese Tatsache dürfen wir nicht ausblenden. Was wir aber sehr wohl tun können: Wir fokussieren und priorisieren uns in der Technologieentwicklung auf Themen, die wir für zukunftsträchtig erachten und die im Einklang mit unserer strategischen Unternehmensentwicklung stehen. Über unsere sechs Aktionsfelder haben wir bereits gesprochen. Heißt konkret: An Topthemen werden wir nicht nur festhalten, manche müssen wir vielleicht sogar forcieren, wenn die Nachfrage auf Kundenseite vorhanden ist.

Viele Jahre war die klassische Produktentwicklung sehr erfolgreich und profitabel, leider auch komplex und schwerfällig. Wie lassen sich neue Technologien agiler, schneller und kostengünstiger zur Marktreife bringen?

Das ist eine Frage, mit der wir uns tagtäglich auseinandersetzen. Wenn wir nicht effizienter werden, in der Art, wie wir entwickeln, können wir die geforderte Geschwindigkeit nicht halten. Das heißt: enger zusammenrücken in den Fachbereichen, agiler und effizienter arbeiten und Prozesse – wo sinnvoll – automatisieren. Zum Beispiel in der Software-Entwicklung. Es macht keinen Sinn, dass Menschen jede Zeile Code neu schreiben, wenn wir Development-Kits haben, die Applikationen weitgehend automatisiert erstellen können. Es fehlen uns Zeit und Ressourcen, um die Automotive-Welt immer wieder neu zu erfinden.

Das Interview führten: Ralf Bretting und Hilmar Dunker



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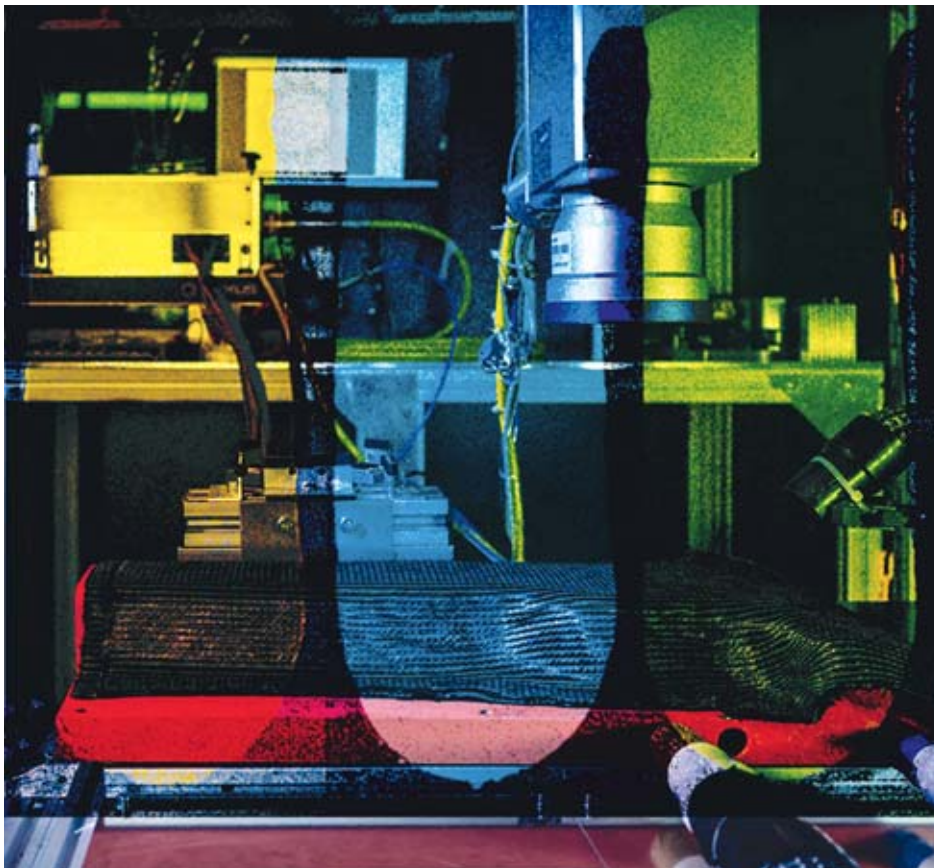
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Zündende Idee

Der Trend zum hybriden Leichtbau macht Konstrukteuren das Leben schwer. Die Multimaterialvielfalt erfordert neue Verfahren in der Fertigung. Im Kommen sind laserbasierte Techniken



▲ Keine Frage: Der hybride Leichtbau bringt Vorteile. Durch eine intelligente Kombination von Werkstoffen lässt sich kräftig Gewicht sparen, obendrein sinken die Kosten. Zur Auswahl steht inzwischen eine Reihe unterschiedlicher Faserverbundwerkstoffe, Metalle und Schäume. Doch noch immer schrecken Konstrukteure vor der Multimaterialbauweise zurück. Werkstoffe wie zum Beispiel Kunststoffe aus Carbonfasern erscheinen teuer, die Anforderungen an die Fertigungsverfahren sind anspruchsvoll. Gegen Verbundwerkstoffe sprechen zudem Nachteile wie ein ungünstiges Versagensverhalten und eine nur bedingte Recyclingfähigkeit.

Den idealen Prozess zum Herstellen von Hybridbauteilen beschreibt Walter Begemann so: „Vorne laufen die Materialien

hinein und hinten fällt das fertige Bauteil heraus.“ Der promovierte Physiker engagiert sich seit Jahren mit viel Leidenschaft in der VDMA-Arbeitsgemeinschaft Hybride Leichtbautechnologien. Dort arbeiten mittlerweile über 200 Firmen kräftig an dieser Vision mit. Nicht wenige von ihnen setzen auf laserbasierte Verfahren, die das Herstellen und Verarbeiten von Verbundwerkstoffen erleichtern sollen. „Im Idealfall können Anwender unter anderem auf Schraubverbindungen und Klebprozesse verzichten“, betont Begemann. Infrage kommt zum Beispiel ein Verfahren, das die Trumpf Laser- und Systemtechnik GmbH aus Ditzingen bisher beim Fügen von Stahlblechen bei der Produktion von Elektroautos verwendet. Das Fügen von Body-in-White-Blechen geschieht flanschlos. Es kommen Bajonettverbindungen – sogenannte Interlock-Elemente – zum

Einsatz, mit denen sich die Bleche vor dem Laserschweißen zusammenklicken lassen. Die Idee zu dieser leichten Form des flanschlosen Fügens stammt übrigens aus der Möbelindustrie, die auf diese elegante Art und Weise per Stecken die Bauteile von Regalen miteinander verbindet.

Hohes Leichtbaupotenzial bietet auch die Kombination von Kunststoffen und Magnesiumblechen. Ein Verfahren für das Fügen entstand am Fraunhofer-Institut für Lasertechnik (ILT) und am Institut für Kunststoffverarbeitung in Industrie und Handwerk (IKV) der RWTH Aachen. Die Wissenschaftler setzen auf ein hybrides Fügeverfahren, in dem sie typische Verfahren der Kunststoffverarbeitung (Spritzguss) mit einer Oberflächenveredelung von Metallen (Lasermikrostrukturierung) kombinieren. Ein Faserlaser mikrostrukturiert Magnesiumbleche, die dann in ein Spritzgießwerkzeug eingelegt werden. Kunststoff und Magnesiumblech verbinden sich anschließend durch Hinterspritzen: Beim Zusammenfügen von Metall und Kunststoff fließt der noch heiße flüssige Kunststoff in die kleinen Vertiefungen und Hinterschneidungen. Er verkrallt sich beim Verhärten quasi in die Metalloberfläche und es entsteht eine adhäsive Verbindung. Diese Verfahrenskombination zeigt, dass sich auch chemisch unterschiedliche Werkstoffe leicht miteinander verbinden lassen. Versuche ergaben laut Fraunhofer-ILT, dass dieses Verfahren deutlich besser als haftvermittlerbasierte Fügeverfahren abschneidet. Bei angepasster Strukturgeometrie und -anordnung soll sich die Zugscherfestigkeit auf über 28 Megapascal erhöhen lassen. Zum Vergleich: Der übliche Wert ist bei Strukturverklebungen: zehn Megapascal.

Prozesssichere Multimaterialverbindungen sollen sich ähnlich gut mit einem Ultrakurzpuls-Laser (UKP) herstellen lassen. Am Institut für Textiltechnik (ITA) der RWTH Aachen entstand im Zusammenspiel mit dem Fraunhofer-ILT sowie drei Firmen im Projekt „CarboLase“ eine Roboterzelle, in der ein robotergeführter UKP-Laser sehr präzise passgenaue Löcher für Gewinde und andere Krafteinleitungselemente (Inserts) in CFK-Halbzeuge (Preforms) bohrt, also bevor das Harz hinzukommt. „Wir nutzen neue ultrakurz gepulste Strahlquellen mit Pulsängen zwischen zwei und 20 Pikosekunden und bis zu einem Megajoule Pulsenergie“, berichtet Projektleiter Stefan Janssen vom Fraunhofer-ILT. „In dieser Zeit wird so viel Energie in das Material eingebracht, dass es ohne thermische Schädigungen verdampft.“ Bei der abschließenden Matrixinfusion entsteht ohne Klebstoff eine zuverlässige und prozesssichere Multimaterialverbindung. Die direkt mit dem Matrixwerkstoff verbundenen Inserts sollen eine um bis zu 50 Prozent höhere maximale Auszugskraft gegenüber konventionell gefertigten Bauteilen mit eingeklebten Inserts besitzen. Das dynamische UKP-Laserbohrverfahren läuft automatisiert und prozesssicher ab und eignet sich besonders für Leichtbauteile, die in der Luftfahrt und im Automobilbau zum Einsatz kommen.

Auch die Kombination von Metallen ist interessant. So untersucht das Fraunhofer-Institut für Werkstoff- und Strahltechnik (IWS) aus Dresden im Leitprojekt „FutureAM“, wie sich

per Laserauftragsschweißen (LMD) ohne nachgelagerte Fügeprozesse beispielsweise aus verschiedenen Superlegierungen ein Multimaterialbauteil herstellen lässt. „Das Verfahren beschleunigt die Materialentwicklungen enorm“, weiß IWS-Wissenschaftler Michael Müller. Wichtig beim Fügen von zwei Werkstoffen ist die Analyse der Übergangzone zwischen den Materialien. Um die Gefahr von Rissen oder Versprödungen zu verringern, verbesserten die Dresdner zum Beispiel den Materialübergang von nickelbasierten Legierungen (von Inconel 718 zu Merl 72). Aktuell nimmt das Fraunhofer-IWS unter die Lupe, wie sich aus Titan und Aluminium ein Multimaterialbauteil herstellen lässt. Doch es muss nicht bei diesen beiden Werkstoffen bleiben: Wenn die Kombi Titan-Aluminium nicht das gewünschte Verhalten zeigt, nehmen die Dresdner wahlweise ein drittes oder halt ein viertes Element hinzu, bis es passt. Infrage kämen derartige Werkstoffkombinationen auch bei Strukturbauteilen. Noch wird es dauern, bis erste Anlagen serienmäßig Hybridbauteile herstellen. Bleibt abzuwarten, welche Materialien dort hineinlaufen und ob dann hinten wirklich ein fertiges Automobilteil herausfällt. Doch eines scheint fest zu stehen: Der Laser wird dabei eine wichtige Rolle spielen.

Autor: Nikolaus Fecht

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► Leistungsfähigkeit, Reichweite und eine kompakte Bauweise sind wichtige Stellhebel bei Sensoren zur 360-Grad-Detektierung und Integration ins moderne Fahrzeug

Gebündelte Power

Für das autonome Fahren sind Zahl, Anordnung sowie Art und Qualität der Sensoren entscheidend. Radar und Lidar machen große Fortschritte.

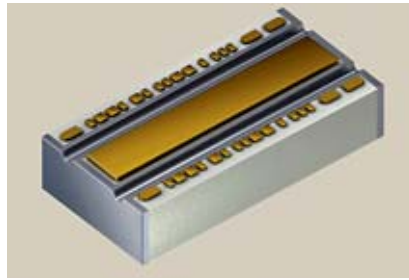
▲ Was Menschen nicht ohne Verrenkung gelingt, sollen Autos der Gegenwart und Zukunft ganz selbstverständlich beherrschen: die 360-Grad-Wahrnehmung ihrer Umgebung. Sie ist unabdingbare Voraussetzung, um weitere automatisierte Fahrfunktionen zuverlässig zu gewährleisten. Radar bietet gute Möglichkeiten, um den Abstand zu einem vorausfahrenden Fahrzeug zu ermitteln, etwa für die automatische Notbremsfunktion. Für komplexere Aufgaben hat sich die 77-GHz-Technologie mit einer HF-Bandbreite von einem GHz durchgesetzt. Sie bietet eine um etliche

Faktoren höhere Trennfähigkeit von Objekten als 24-GHz-Radarsensoren. 77 GHz kommt daher seit geraumer Zeit nicht nur für Fern-, sondern auch für Nahbereichsradare zum Einsatz.

Elektronikzulieferer Hella bringt derzeit seine neueste Radartechnologie auf 77-GHz-Basis auf den Markt. Leistungsfähigkeit, Reichweite sowie eine kompakte Bauweise seien die drei wesentlichen Kriterien zur 360-Grad-Detektierung und Integration ins moderne Fahrzeug, hört man aus Lippstadt. Hella setzt die aktuellen Radarsensoren auf

Basis eines modularen und skalierbaren Plattformkonzepts um. Damit sollen sich kundenspezifische Anforderungen flexibel und effizient verwirklichen und sowohl die NCAP-Anforderungen als auch Funktionen des automatisierten Fahrens erfüllen lassen. Mit dieser Technologie decke man alle wesentlichen Marktanforderungen ab, sagt Frank Petznick, der als Mitglied der Geschäftsleitung Elektronik bei Hella das globale Produktzentrum Automated Driving verantwortet. Die Range der Anwendungen reiche von kostenoptimierten Sensoren für klassische Assistenzfunktionen bis hin zu leis-

tungsstarken Varianten, die für höhere Entwicklungsstufen des autonomen Fahrens benötigt werden. Um die Leistungsfähigkeit der Radarplattform noch weiter zu heben, ging Hella Anfang des Jahres eine strategische Partnerschaft mit dem US-amerikanischen Startup Oculii ein. Die Integration einer von Oculii entwickelten Software soll der Leistungsfähigkeit weiteren Schub verleihen. Für seine Systeme hat Hella bereits mehrere Großaufträge akquiriert. Zunächst wird ein asiatischer Hersteller von Lkw und Bussen beliefert. In diesem Zusammenhang erfolgt die Markteinführung im Rahmen einer strategischen Kooperation mit ZF. Im Anschluss will man die Serienproduktion für weitere internationale Pkw-Hersteller aufnehmen. Gefertigt werden die Radarsensoren zunächst im Elektronikwerk im deutschen Hamm, anschließend sollen sie auch in China und in den USA produziert werden.



► Osrams einkanaliger Puls laser liefert eine bessere Strahlqualität

Lidar ist besonders stark bei der Generierung hochauflösender 3D-Informationen in Echtzeit. Je umfassender und verlässlicher ein autonomes Fahrzeug die Umgebung erkennen soll, desto wichtiger werden Anzahl und spezielle Anordnung von Sensoren, betont der Fertiger Osram Opto Semiconductors, der über langjährige Erfahrung in der Entwicklung und Fertigung spezieller Infrarotlaser für Lidarsysteme verfügt.



► Hella's Radartechnologie basiert auf einer modularen Plattform

Bei den Lasern stärken die Halbleiterexperten ihr Programm nun um ein Bauteil, das speziell für die hochauflösende Nahfeldererkennung in Lidarsystemen entwickelt wurde. Neben dem weiten Blick nach vorne – mit sogenanntem Long-Range-Lidar bis etwa 250 Meter – müsse auch eine verlässliche Erfassung des unmittelbaren Umfelds erfolgen.

Redakteur: Götz Fuchslocher

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► Die Marktanteile von Halogen und Xenon nehmen perspektivisch ab. Auf der Überholspur ist die LED-Technologie, die künftig deutlich mehr können wird, als nur zu leuchten

Projekt Licht

Hersteller verbauen noch immer konventionelle Glühlampen in den Scheinwerfern moderner Fahrzeuge. Die Zukunft gehört dem LED-Licht, das nicht nur die Fahrbahn ausleuchten kann

▲ Bei der Außenbeleuchtung von Fahrzeugen ist LED-Technologie das Maß der Dinge. Mehrere Faktoren machen die lichtemittierenden Dioden attraktiv: Sie bieten im Vergleich zu herkömmlichen Glühlampen eine längere Lebensdauer, werden beständig günstiger und haben einen geringeren Energieverbrauch. „Diese Einsparungen sind auch im Hinblick auf die Fahrzeugreichweite bei der Elektromobilität ein wichtiges Thema“, sagt Steffen Pietzonka von Zulieferer Hella. Außerdem handelt

es sich um eine skalierbare Lichtquelle nach dem Bausteinprinzip. Bedeutet: Es können beliebig viele Dioden verbaut werden. Für Fahrzeugdesigner bietet LED zudem neue Möglichkeiten: So können zum Beispiel Scheinwerfer deutlich kleiner oder gar schlitzförmig ausfallen, ohne dass dies zu Kompromissen bei der Helligkeit führt. Einzelne Pixel lassen sich gezielt ansteuern, so dass auch Matrixscheinwerfer realisiert werden können. Dennoch werden viele Neufahrzeuge in ihrer Grundauss-

stattung noch immer mit herkömmlicher Halogen- oder Xenontechnik angeboten. Besonders in Asien ist Xenon weiterhin beliebt. Es ist nach wie vor ein gut performantes Lichtsystem, bei dem man auf Standardkomponenten zurückgreifen kann. Früher oder später wird Xenon aber aus dem Markt verschwinden, da sind sich die Hersteller einig. „Je nach Region wird sich der Schwerpunkt von klassischen Halogen- oder Xenon-Leuchtmitteln mehr oder weniger schnell auf neue Techno-

logien wie LED verlagern“, sagt Hans-Joachim Schwabe, der Chef von Osram Automotive. In der Tat breitet sich die LED-Technologie bei Fahrzeugen rasch aus: Nach nur zehn Jahren kommen die Systeme bei neuen Fahrzeugen bereits auf einen Marktdurchdringungsgrad von 25 bis 30 Prozent. Xenon hat laut Hella 20 Jahre für rund 13 Prozent gebraucht. „Nach aktuellen Marktanalysen wird erwartet, dass der Marktanteil von Xenon bei Neufahrzeugen bis 2024 auf nahezu null gehen wird. Der Anteil von Halogen sinkt im gleichen Verhältnis ab, wie der Marktanteil von LED zunimmt“, fügt CTO Ralf Klädtke von Zulieferer ZKW hinzu. In rund vier Jahren dürften beide Technologien auf den gleichen Anteil kommen. „Bis 2030 könnten dann mehr als 70 Prozent der Neufahrzeuge LEDs nutzen.“ Durch die Möglichkeit, Dioden einzeln anzusteuern, lassen sich neben der reinen Beleuchtung weitere Funktionen umsetzen. Etwa die Übermittlung von Warnhinweisen oder Symbolen an andere Verkehrsteilnehmer über die Heckleuchte oder an den Seiten- und Rückspiegeln. Generell wird die Bedeutung der visuellen Kommunikation eines Fahrzeugs mit seiner Umgebung zunehmen, sind sich Experten sicher. Besonders für autonom lenkende Autos könnte das entscheidend werden. „In den nächsten Jahren werden Systeme auf den Markt kommen, die Lichtanimationen oder Bodenprojektionen rund um das Fahrzeug ermöglichen“, sagt Ralf Klädtke. „Unserer Meinung nach wird es darum gehen, Komponenten zu entwickeln, die mehr können, als nur Licht auszusenden und über Kamerasysteme wahrzunehmen“, beschreibt

Osram-Automotive-Chef Schwabe die Zukunft des Fahrzeuglichts.

Die Entwicklung von LED-Systemen ist jedoch alles andere als einfach. Hersteller betreten damit die Welt der Elektronik und bekommen es mit immer häufigeren Produktankündigungen, rapiden Leistungsverbesserungen oder neuen Funktionalitäten zu tun. Auch

sind die Fertigungs- und Logistikprozesse sowie das Teile- und Komplexitätshandling herausfordernd: Besteht ein Halogen- oder Xenon-Scheinwerfer nur aus zehn bis zwanzig Teilen, sind es beim LED-Scheinwerfer bis zu 300. Zudem sind LED-Systeme nicht ohne Weiteres austauschbar.

Redakteur: Jonas Rosenberger



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Komfortzonen

Aktuelle Infotainmentsysteme fokussieren sich auf Fahrerlebnis, Komfort und Sicherheit. OEMs und Zulieferer setzen auf große Bildschirme sowie eine KI-gestützte Sprachsteuerung



► Der Ignite Marketplace von Harman umfasst unter anderem zahlreiche Medieninhalte, Point-of-Interest-Lösungen, Messaginganwendungen und eigene Sprachassistenten

▲ Aug' in Aug' und ganz Ohr: Nichts ist natürlicher als ein Zwiegespräch. Auf dieses Zusammenspiel der Sinne scheint sich die Branche in jüngster Vergangenheit auch bei der Bedienung von komfortbezogenen sowie sicherheitsrelevanten Systemen im Fahrzeug zu besinnen. Vorüber – oder zumindest nahezu vorbei – die Zeiten, in denen Autofahrer über ein hohes Maß an Multitaskingfähigkeit verfügen mussten, wenn sie im Navigationssystem eine neues Routenziel programmieren wollten und sich

gleichzeitig auf die Fahrbahn konzentrieren mussten. Große Bildschirme und durchdacht digitalisierte Cockpits sollen die sogenannte Fahrerablenkung nun reduzieren und den Autolenker nicht mehr länger einem Durchforsten endloser Menüpunkte auf kleinen Displays aussetzen, verspricht der Automotive-Experte Rolf Bittner vom Software-Framework-Provider The Qt. „Ease of Use“.

Daimler etwa zeigt mit MBUX ein intuitives und lernfähiges Multimedia-

system, das die Stuttgarter derzeit in vielen Modellen in die Fläche bringen. Nach der Mercedes-Benz A-Klasse, dem CLA und dem GLC ist es auch im Großraum-Van V-Klasse verfügbar. Kern ist ein intuitives Bedienkonzept, bei dem neben der haptischen Eingabe vor allem natürliche Spracheingabe einen Schwerpunkt bildet. Es verfügt über ein hohes Sprachverständnis und ist lernfähig. Dazu kommen KI-gestützte Algorithmen zum Einsatz. Über sogenannte Prediction Features ist das

System individualisierbar. Für einen hohen Praxisnutzen lassen sich in den Infotainmenteinstellungen bis zu acht individuelle Profile hinterlegen.

Continental will mit seiner Infotainmentplattform eine für die Breitenanwendung gangbare Lösung bieten. Sie umfasst eine Smartphone-Integration und Navigation mit Live-HD-Online-Verkehrsinformationen. Ende des vergangenen Jahres meldete der Zulieferer den Einsatz der Plattform in der PSA-Gruppe. Das System läuft auf dem Open-Source-Betriebssystem Linux und erfüllt den Genivi-Standard. Bei der Entwicklung habe man sich von der „Always on“-Vision tragen lassen, heißt es von Seiten des Zulieferers. Eine Connected-Head-Unit soll den Fahrer mit Live-Verkehrsinformationen, Wettervorhersagen sowie Parkinformationen und Treibstoffpreisen eine Vielzahl aktueller Onlinedienste bieten. Eingebettet sind diese Services in das Navigationssystem des Zulieferers TomTom. Bei der Zielführung wird die aktuelle Verkehrslage berücksichtigt und die Ankunftszeit exakt vorhergesagt. Die Onlineverbindung des Infotainment-systems können Fahrer und Beifahrer auch als Hotspot nutzen. Für die Smart-

»Fahrer und Insassen wünschen einen ungestörten und möglichst stark personalisierten Zugang zu ihren Lieblingsinhalten«

Arvin Baalu
Product Management
Harman

phone-Anbindung unterstützt die Head Unit mit Apple CarPlay und MirrorLink bereits die wichtigsten Integrationsmechanismen. Komplettiert wird das Entertainmentangebot der Head Unit durch ein Radio, das neben klassischen Ukw-Programmen auch den digitalen Rundfunkstandard DAB empfängt.

Ein Indikator für neue Entwicklungen auf dem Gebiet des Infotainments in Fahrzeugen ist die alljährlich im Januar stattfindende Hightech-Messe CES in Las Vegas, die sich zu einer Pflichtveranstaltung auch für die Automotive-Branche entwickelt hat. Ein völlig scharf um-

rissenes Ziel, wohin die Reise mit Blick auf Hightech im Fahrzeug geht, sei in diesem Jahr indes nicht auszumachen gewesen, resümiert HMI-Experte Peter Rößger. Zu den auffälligen Themen zählten aus Sicht des Fachmanns Entwicklungen, die die Übergabe der Fahrverantwortung für die Stufen des automatisierten Fahrens thematisierten. Für sie bedarf es einer umfassenden Fahrerüberwachung und klugen Sensorik. Im Bereich der HMI kündigen sich sogenannte Shy-Tech-Lösungen an, also nicht offenkundig sichtbare und die Optik des Interieurs störende Bedienelemente. Im Gegensatz dazu stehen sogenannte allgegenwärtige HMIs, also mithilfe von Augmented Reality ergänzte Informationen. Ganz klar im Trend liegen Touchdisplays in modernen Fahrzeugen, die verstärkt in kleine Fahrzeugklassen hineingelangen. Und: In Las Vegas zählten spacige Showcars zu den Publikumsmagneten, mit deren Hilfe Konzerne ihre Visionen von HMI und Infotainment präsentieren, etwa Sony mit dem Vision S oder Mercedes-Benz mit der elektrifizierten Zukunftsstudie AVTR.

Äußerst praxisnah gibt sich im Gegensatz dazu der zum Samsung-Konzern gehörende Bedien- und Entertainment-

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1 Kern des Infotainmentsystems MBUX ist ein intuitives Bedienkonzept mit Fokus auf Spracheingabe

2 Harman will mit einem offenen OTA-Angebot mehr Flexibilisierung und Personalisierung ermöglichen

3 Die Connected Head Unit von Contis Infotainmentplattform soll den Fahrer mit Live-Verkehrsinfos versorgen

experte Harman. Dies mit Angeboten und Entwicklungen, die entweder bereits heute verfügbar sind oder aber in der nächsten Modellgeneration „das Fahrerlebnis im Innenraum grundlegend ändern und neu definieren können“, hört man vom Unternehmen. Um Erlebnisse zu schaffen, die dem Fahrer auch veritable Vorteile bieten, bedarf es nach Angaben des Hightech-Unternehmens einer speziell zusammengestellten Sammlung vernetzter Auto-, Audio- und Servicetechnologien. Harman wendet sich daher etwa mit seiner sogenannten ExP Integrated Solution Suite an OEMs, die damit „maßgeschneiderte Technologiepakete“ für spezielle Fahrerlebnisse schnüren können. Audio Marketplace hingegen ist ein neues, cloudbasiertes Ökosystem, das es Benutzern erlaubt, Audio-, Unterhaltungs- und Kommunikationsfunktionen im Fahrzeug mit lediglich einem Knopfdruck nach Bedarf hinzuzufügen und zu aktualisieren. Das offene OTA-Angebot (Over the Air) ermögliche während der gesamten Lebensdauer des Fahrzeugs ein neues Maß an Personalisierung und Flexibilität für das Erlebnis im Innenraum. Zu

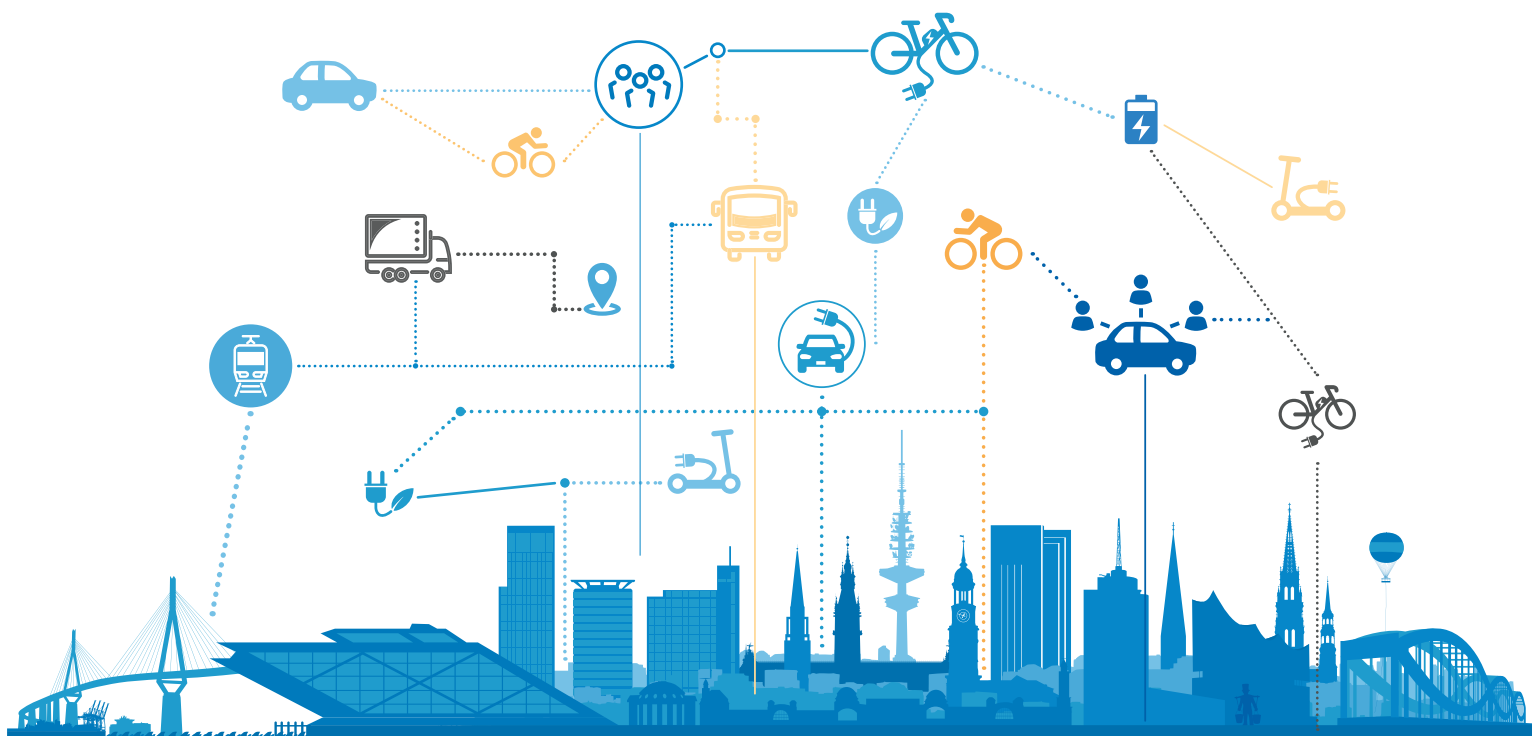
Harmans Portfolio zählt zudem softwareaktiviertes Branded Audio – ein Bereitstellungsmodell, das Experten als sofort aktivierbare Systemkomponente beschreiben. Auf Knopfdruck soll eine völlig neue Art des Online-Upgrades von einem Basis-Audio- zu einem Premium-Branded-Audio-Erlebnis in neuen Fahrzeugen möglich werden. Überdies biete man mit dem Ignite Marketplace ein cloudbasiertes Ökosystem, das ein umfassendes Netzwerk globaler Services schaffen soll, verspricht Harman. Erreicht werde dies, indem der Marketplace den Zugang zu einem umfassenden Ökosystem cloudbasierter Anwendungen und Services ermöglicht. Ignite umfasst derzeit Medieninhalte, Point-of-Interest-Lösungen, Messaging-Anwendungen und einen für das Fahrzeug designten Sprachassistenten.

Da das Leben immer digitaler wird, ist der Wunsch nach nahtloser Konnektivität im Fahrzeug so hoch wie nie zuvor, weiß Arvin Baalu aus dem Produktmanagement und System Design bei Harman International. „Fahrer und Fahrzeuginsassen wünschen einen un-

gestörten und möglichst stark personalisierten Zugang zu ihren Lieblingsinhalten, Messagingdiensten, sozialen Plattformen – und zwar so, dass ihr Lebensalltag nicht unterbrochen, sondern verbessert wird.“ Heutige Endkunden pflegen dank Smartphone, Tablet und Co. einen digitalen Lebenswandel. Digital Natives werden vermehrt zu Mobilitätsanwendern und Autofahrern, die nun ihre Ansprüche an die Player des Markts stellen. „Um diese Erwartungen zu erfüllen, ist es immens wichtig, Lösungen zu schaffen, die nicht nur singuläre Fahr- oder Infotainmentfunktionen bieten, sondern zusammenhängende, sinnvolle Fahrerlebnisse.“ Die größte Auswirkung entsteht nach Ansicht Baalus nicht durch Lösungen, die für sich allein genommen innovativ seien, sondern wenn jede einzelne Technologie – von Telematik und Cloud bis hin zu sprachgesteuerten virtuellen Assistenten und intelligentem Audio – kohärent zusammenarbeite, schildert der Experte. Dazu sollen gesamthaft gedachte Lösungen beitragen.

Redakteur: Götz Fuchslocher

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Am Rande des großen Abschwungs

2019 war die Welt der Zulieferer noch weitgehend in Ordnung: Der kumulierte Branchenumsatz lag umgerechnet bei knapp einer Billion Dollar, nur knapp ein Prozent unter Vorjahresniveau. Im Ranking der Top 10 hat sich fast nichts verändert. Trotzdem waren erste Anzeichen eines Abschwungs unübersehbar. Corona potenziert den Druck nun um ein Vielfaches



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Die Top 10 Zulieferer

Company	Sales 2019	Sales 2018	Rank 2020	Rank 2019
Bosch	52,370	56.210	1	1
Continental	46,205	49.187	2	2
Denso	45,625	46.782	3	3
Magna	39,431	40.827	4	4
ZF Group	37,531	40.148	5	5
Aisin Seiki	34,716	36.618	6	6
Hyundai Mobis	32,637	31.974	7	7
Bridgestone	27,006	27.543	8	8
Valeo	21,803	22.599	9	10
Huayu Automotive	20,849	23.781	10	9

Aufsteiger

Company	Sales 2019	Sales 2018	Rank 2020	Rank 2019	Position change
Marelli	14,999	5,906	18	54	36
CIE Automotive	3,874	-	76	-	24
TI Fluid Systems	3,818	-	77	-	23
Garrett	3,248	-	86	-	14
Tenneco	17,450	11,763	14	26	12
Hanon	6,137	5,402	47	59	12
Yokohama	4,739	4,119	61	71	10
Panasonic	13,598	8,962	23	31	8
Futaba	4,224	4,044	66	74	8
NXP	4,212	3,953	67	75	8

Am stärksten gewachsen

Company	Rank 2020	Rank 2019	Sales 2019	Sales 2018	Sales change
Marelli	18	54	14,999	5,906	9,093
Tenneco	14	26	17,450	11,763	5,687
Panasonic	23	31	13,598	8,962	4,636
Plastic Omnium	29	29	10,279	9,058	1,221
Weichai Power	21	22	14,244	13,407	837
Hanon	47	59	6,137	5,402	735
Yokohama Rubber	61	71	4,793	4,119	674
Hyundai Mobis	7	7	32,637	31,974	663
Joysen Group	32	35	8,931	8,428	503
Dana	35	37	8,620	8,143	477

Die Schlusslichter der Top 100

Company	Sales 2019	Sales 2018	Rank 2020	Rank 2019
Fuyao Glass	3,055	3.060	91	92
Visteon	2,945	2,984	92	93
Stanley Electric	2,935	3,166	93	90
Martinrea	2,912	2,827	94	98
Sungwoo Hitech	2,907	3,148	95	91
Mitsuba	2,789	2,865	96	96
Cooper Tire&Rubber	2,753	2,808	97	99
SKF	2,581	2,899	98	95
Nippon Sheet Glass	2,577	2,850	99	97
Tachi-S	2,569	2,970	100	94



Absteiger



Company	Sales 2019	Sales 2018	Rank 2020	Rank 2019	Position change
Cooper Standard	3,108	3,629	89	80	9
NSK Group	5,264	6,246	57	49	8
TS Tech	3,201	3,622	88	81	7
Thyssenkrupp	11,738	14,144	27	20	7
Mahle	13,488	14,867	24	17	7
Tachi-S	2,569	2,970	100	94	6
Eaton	3,359	3,809	85	79	6
Illinois Tool Works	3,911	4,181	75	70	5
Nemak	4,019	4,700	70	65	5
Motherson Sumi	6,271	7,630	46	41	5



Am meisten verloren

Company	Rank 2020	Rank 2019	Sales 2019	Sales 2018	Sales change
Bosch	1	1	52,370	56,210	-3,840
Continental	2	2	46,205	49,187	-2,982
Huayu	10	9	20,849	23,781	2,932
ZF	5	5	37,531	40,148	2,617
Thyssenkrupp	27	20	11,738	14,144	2,406
Aisin Seiki	6	6	34,716	36,618	1,902
Magna	4	4	39,431	40,827	1,396
Mahle	24	17	13,488	14,867	1,379
Motherson Sumi	46	41	6,271	7,630	1,359
Lear	13	11	19,810	21,148	1,338

Sales: in Mio. US\$

Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures: in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
1	 Robert Bosch GmbH Robert-Bosch-Platz 1 70839 Gerlingen- Schillerhöhe Baden-Württemberg Germany www.bosch.com FY ended: Dec, 31					Mobility Solutions					
(1)			Mio US\$ 2019	87,001	52,370	60.2%	52,370				
			Mio US\$ 2018	92,722	56,210	60.6%	56,210				
			Mio US\$ 2017	88,222	53,549	60.7%	53,549				
			Mio Euro/€ 2019	77,721	46,784	60.2%	46,784				
			Mio Euro/€ 2018	78,465	47,567	60.6%	47,567				
			Mio Euro/€ 2017	78,066	47,384	60.7%	47,384				
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 398,150 2918: 409,881	77,721 Mio €	100.0%	Dr. Volkmar Denner: Chairman; Prof. Stefan Asenkerschbaumer: Deputy Chairman; ; Dr. Stefan Hartung: Chairman Bosch Mobility Solutions; Dr. Markus Heyn: Original Equipment Sales, Marketing and Sales; Harald Kroeger: Systems Engineering and Technical Strategy Mobility Solutions; Christoph Kübel: Human Resources and Social Services; Uwe Raschke: Consumer Goods; Peter Tyroller: Regional Responsibility Asia-Pacific, India						
Automotive:			236,653	46,784 Mio €	60.2%	Mobility Solutions: https://www.bosch-mobility-solutions.com Annual Report: https://www.bosch.com/explore-and-experience/annual-report/ Press Releases: http://www.bosch-presse.de/pressportal/de/de/news/					
Americas:			44,927	14.400 Mio €	19.0%						
NAFTA/North America:			n.a.	n.a.	n.a.						
South America:			n.a.	n.a.	n.a.						
Asia-Pacific*:			111,717	22,500 Mio €	29.0%						
Japan:			n.a.	n.a.	n.a.						
Europe (excluding Germany):			109,845	40,800 Mio €	52.0%						
Germany:			132,661	n.a.	n.a.						
Further Information											
Company profile:		The Bosch Group is a leading global supplier of technology and services. It employs roughly 400,000 associates worldwide (as of December 31, 2019). The company generated sales of 77.7 billion euros in 2019. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. The company was set up in Stuttgart in 1886 by Robert Bosch (1861–1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.									
Revenue split:		Mobility Solutions (61% of sales 2018), Industrial Technology (9%), Consumer Goods (23%), Energy and Building Technology (7%)									
Sites (production/R&D):		The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world.									
R&D facts:		R&D cost came to 6.1 billion euros in 2019, and research and development intensity to 7.8 percent. This compares with 6.0 billion euros and 7.6 percent respectively the previous year. Mobility Solutions business sector: 72%									
Main automotive Customers:		Car manufacturers and mobility service providers worldwide.									
Main automotive products:		The Mobility Solutions business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.									
Main automotive competitors:		Major first-tier-suppliers and specialized enterprises in specific areas.									
Sources:		Annual Report, Company Information									
Annotations:		* Including other countries, also in Africa									

Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures: in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
2	 Continental AG Vahrenwalder Straße 9 30165 Hanover Lower Saxony Germany www.continental-corporation.com FY ended: Dec, 31					Chassis & Safety	Powertrain	Interior	Tires	ContiTech*	
(2)			Mio US\$ 2019	49,789	46,205	92.8%	10,502	8,734	10,742	13,128	7,166
			Mio US\$ 2018	52,472	49,187	93.7%	11,330	9,148	11,470	13,415	7,509
			Mio US\$ 2017	49,735	46,742	94.0%	11,012	8,516	10,483	12,774	6,950
			Mio Euro/€ 2019	44,478	41,277	92.8%	9,382	7,802	9,596	11,728	6,402
			Mio Euro/€ 2018	44,404	41,624	93.7%	9,588	7,741	9,707	11,352	6,345
			Mio Euro/€ 2017	44,009	41,361	94.0%	9,744	7,536	9,276	11,303	6,150
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 241,458 2018: 243,226	44,478 Mio €	100.0%	Dr. Elmar Degenhart: Chairman of the Executive Board; Corporate Communications; Corporate Quality and Environment; Continental Business System; Wolfgang Schäfer: Finance, Compliance, Law, Controlling, and IT; Dr. Ariane Reinhard: Human Relations, Director of Labor Relations, Sustainability; Frank Jourdan: Autonomous Mobility and Safety business; Helmut Matschi: Vehicle Networking and Information business; Nikolai Setzer: Spokesman of the Automotive Board, Central Functions Automotive; Christian Kötz: Tire Division, Corporate Purchasing; Hans-Jürgen Duensing: Member of the Executive Board, ContiTech Division						
Automotive:			n.a.	41,277 Mio €	92.8%	Annual Reports: https://www.continental.com/en/investors/reports Press Releases: https://www.continental.com/en/press/press-overview Automotive: https://www.continental-automotive.com/					
Americas:			53,861	n.a.	n.a.						
North America:			45,912	11,628 Mio €	26.1%						
South America:			7,949	n.a.	n.a.						
Asia-Pacific:			46,265	9,752 Mio €	22.9%						
Africa:			1,429	n.a.	n.a.						
Europe:			138,537	21,453 Mio €	48.2%						
Germany:			n.a.	8,350 Mio €	18.8%						
Other:			n.a.	1,646 Mio €	3.7%						
Further Information											
Company profile:		Continental develops pioneering technologies and services for sustainable and connected mobility of people and their goods. Founded in 1871, the technology company offers safe, efficient, intelligent and affordable solutions for vehicles, machines, traffic and transportation. In 2019, Continental generated sales of €44.5 billion and currently employs 242,000 people in 59 countries and markets.									
Revenue split:		Automotive Group: Sales: €26.5 billion; Rubber Group: Tires: Sales €11.7 billion; ContiTech: Sales €6.4 billion.									
Sites (production/R&D):		595 sites in 59 countries.									
R&D facts:		88 r&d locations worldwide, 3,364 Mio Euro									
Main automotive Customers:		Daimler, Fiat Chrysler, Ford, Renault-Nissan-Mitsubishi und VW									
Main automotive products:		Safety: Brake systems, Emergency brake assist, Lane change assist, Lane departure warning system, Blind spot monitoring, Collision avoidance in urban traffic, Occupant safety systems, Pedestrian protection systems, Tires and extended mobility systems, Tire pressure monitoring systems, Telematics for automatic emergency calls; Environment: Piezo and solenoid injection technologies, Gasoline Turbocharger, Hybrid and electric systems, Drive assemblies for electric vehicles without rare earths, Exhaust aftertreatment solutions, Engine management, Rolling-resistance-optimized tires, Tire pressure monitoring systems, Lightweight components, Hose lines for SCR technology; Information: Navigation systems, Tachographs, Instruments, Instrument clusters, Secondary displays, Head-up displays, Cockpit modules, Multimedia systems, Telematics systems, Infotainment solutions, Passive start and entry systems, Tire information systems, ITS/Intelligent Transportation Systems, Software Solutions, Services									
Main automotive competitors:		n.a.									
Sources:		Company Information, 2019 Annual Report									
Annotations:		* 50% of ContiTech-sales related to business with vehicle manufacturers, and 50% related to business with other industries									

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates									
			in figures only:	in figures:	in % of Total Sales:	Automotive Business	Others								
3	 DENSO Corporation 1-1, Showa-cho/448-8661 Kariya Aichi Prefecture Japan www.globaldenso.com FY ended: March, 31														
(3)			Mio US\$ 2019/20	47,273	45,625	96.5%	45,625	1,647							
			Mio US\$ 2018/19	48,571	46,784	96.3%	46,784	1,787							
			Mio US\$ 2017/18	45,571	44,180	96.9%	44,150	1,431							
			Mio Yen/¥ 2019/20	5,153,476	4,973,876	96.5%	4,973,876	179,600							
			Mio Yen/¥ 2018/19	5,362,772	5,165,472	96.3%	5,165,472	197,300							
			Mio Yen/¥ 2017/18	5,108,300	4,952,400	96.9%	4,952,400	160,400							
			Global Footprint	Employees	Regional Sales			Board							
	Total:	2019: 170,932 2018: 171,992		5,153,476 Mio ¥	100.0%	Koji Arima: President and CEO; Executive Vice Presidents: Yasushi Yamanaka, Hiroyuki Wakabayashi, Toshiyuki Kato, Sadahiro Usui;									
	Automotive:		n.a.	4,973,876 Mio ¥	96.5%	Contact: https://www.denso.com/global/en/contact-us/ Annual Reports: https://www.denso.com/global/en/about-us/facts-and-figures/ Press Releases: https://www.denso.com/global/en/news									
	Americas:		n.a.	1,145,230 Mio ¥	22.2%										
	NAFTA/North America:		n.a.	1,145,230 Mio ¥	22.2%										
	South America:		n.a.	n.a.	n.a.										
	Asia-Pacific:		n.a.	3,399,908 Mio ¥	66.0%										
	Japan:		n.a.	2,313,046 Mio ¥	44.9%										
	Europe:		n.a.	548,301 Mio ¥	10.6%										
	Germany:		n.a.	60,037 Mio ¥	1.2%										
	Further Information														
	Company profile:	Denso is a leading supplier of advanced automotive technology, systems and components for major automakers. After becoming independent from Toyota Motors, it was founded as Nippon Denso Co. Ltd. in 1949. About 25% of the company is owned by Toyota Motor.													
	Revenue split:	Denso is a leading supplier of advanced automotive technology, systems and components for major automakers. After becoming independent from Toyota Motors, it was founded as Nippon Denso Co. Ltd. in 1949. About 25% of the company is owned by Toyota Motor.													
	Sites (production/R&D):	200 sites: Japan 64, North America 23, Europe 32, Asia 74, Others 7.													
	R&D facts:	R&D expenditure reached 507.8 billion yen in FY 2020, 447.4 billion yen in FY 2019 and in fiscal 2017 R&D expenditure came to ¥409.2 billion. In fiscal 2018 it was ¥497.4 billion.													
	Main automotive Customers:	Denso works hand-in-hand with all major automakers worldwide. Toyota Group: 2,456.9 billions of yen (47.7%). Other Customers include Honda (392.3 billions of yen), FCA (183.8), Ford (129.7), GM (160.6), Hyundai-Kia (118.4), Mazda (119.8), Suzuki (114.1), VW/Audi (63.4), Nissan (91.5), Isuzu (61.2), Mitsubishi (59.3), BMW (50.9), PSA (46.6), Volvo (41.9), Daimler (24.3) and others (599.5 billions of yen).													
	Main automotive products:	Denso products cover almost all areas in automobiles. Business groups include Powertrain Control Systems, Electronic Systems, Thermal Systems, Information and Safety Systems and Small Motors.													
	Main automotive competitors:	Other automotive suppliers such as Bosch, Magna, Continental, etc.													
	Sources:	Annual Report, Company Information													
	Annotations:														

THE DRIVING FORCE.








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Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates									
4 ▶ (4)	 Magna International Inc. 337 Magna Drive Aurora, Ontario Canada L4G 7K1 www.magna.com FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Body Exteriors & Structures	Power & Vision	Seating Systems	Complete Vehicles					
			Mio US\$ 2019	39,431	39,431	100.0%	16,458	11,312	5,577	6,707				
			Mio US\$ 2018*	40,827	40,827	100.0%	17,527	12,321	5,548	6,018				
			Mio US\$ 2017	38,946	38,946	100.0%	16,613	11,629	5,224	3,547				
Global Footprint			Employees	Regional Sales	Board									
Total:			2019: 165,000 2018: 174,000	39,431 Mio US\$	100.0%	Chief Executive Officer: Donald J. Walker; President, Magna International and President, Magna Power and Vision: Seetarama Swamy Kotagiri; Chief Financial Officer: Vincent J. Galifi; Chief Operating Officer: Tommy J. Skudutis; President, Magna Asia: James J. Tobin, Sr.; President, Magna Europe and President, Magna Steyr: Günther F. Apfalter; President, Magna China: Mark Dong;								
Automotive:			n.a.	39,431 Mio US\$	100.0%									
Americas:			n.a.	n.a.	n.a.									
NAFTA/North America:			n.a.	19,349 Mio US\$	49.1%									
South America:			n.a.	n.a.	n.a.									
Asia-Pacific:			n.a.	2,164 Mio US\$	5.5%									
China:			n.a.	1,947 Mio US\$	4.9%									
Europe:			n.a.	17,331 Mio US\$	44.0%	Suppliers Contact: https://www.magna.com/company/suppliers Annual Reports: https://www.magna.com/company/investors Press Releases: https://www.magna.com/company/newsroom/releases								
Rest of the World:			n.a.	587 Mio US\$	1.5%									
Further Information														
Company profile:		Magna is a global automotive supplier which has complete vehicle engineering and contract manufacturing expertise, as well as product capabilities including body, chassis, exterior, seating, powertrain, advanced driver assistance, electronics, vision, mechatronics and roof systems. Joint ventures in China will help increase the presence in the world's largest new vehicle market. This includes an engineering joint venture with BJEV, a subsidiary of the BAIC Group, to design a battery electric vehicle architecture for the Chinese market. Additionally, Magna expects to complete a second joint venture with BJEV to assemble electric vehicles (EVs) in China, at Magnas first vehicle production facility outside of Europe. Magna also expanded the complete vehicle engineering services for the European market with a new partnership with Altran in Morocco.												
Revenue Split:		See Business Units												
Sites (production/R&D):		94 engineering/Product Development/Sales Centres; Magna's operations span four continents and 27 countries with 327 manufacturing operations and 100 product development, engineering and sales centres.												
R&D-Facts:		For the years ended December 31, 2019 and 2018, research and development costs charged to expense were approximately \$640 million and \$588 million, respectively. \$640 million and \$588 million, respectively.												
Main Automotive Customers		Magna delivers parts to all of the leading OEMs. Main customers are General Motors, Ford, Fiat Chrysler, BMW, Daimler, Volkswagen.												
Main automotive products:		Product capabilities include producing body, chassis, exterior, seating, powertrain, electronic, vision, closure and roof systems and modules, as well as complete vehicle engineering and contract manufacturing.												
Main automotive competitors:		Aisin Seiki, Bosch, Continental, Delphi, Denso, Faurecia, Johnson Controls, Lear, Meritor, TRW, Visteon and others.												
Sources:		Annual Report												
Annotations:		*Since January 1, 2018, our results are reported through the following business segments: Body Exteriors & Structures, Power & Vision, Seating Systems and Complete Vehicles. Prior period amounts have been adjusted to conform to the new segment presentation.												

Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates								
5 ▶ (5)	 ZF Friedrichshafen AG 88038 Friedrichshafen Baden-Württemberg Germany www.zf.com FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Automotive	Construction and agricultural machinery, marine craft, aircraft, wind power						
			Mio US\$ 2019	40,878	37,531	92.0%	37,531	3,347					
			Mio US\$ 2018	43,639	40,148	92.0%	40,148	3,491					
			Mio US\$ 2017	41,185	37,890	92.0%	37,890	3,295					
			Mio Euro/€ 2019	36,518	33,528	92.0%	33,528	2,990					
			Mio Euro/€ 2018	36,929	33,975	92.0%	33,975	2,954					
			Mio Euro/€ 2017	36,444	33,528	92.0%	33,528	2,916					
Global Footprint			Employees	Regional Sales	Board								
Total:			2019: 147,797 2018: 148,969	36,518 Mio €	100.0%	Wolf-Henning Scheider: Chief Executive Officer, Corporate Research & Development; Dr. Konstantin Sauer: Corporate Finance, IT, M&A Sabine Jaskula: Human Resources and Legal Affairs Michael Hankel: Car Powertrain Technology, E-Mobility, Corporate Production, Key Account Mgmt. Passenger Cars Customers Europe & North America Dr. Holger Klein: Car Chassis Technology, Aftermarket, Region Asia Pacific, Region India, Key Account Mgmt. Passenger Cars Customers Asia Pacific & India							
Automotive:			n.a.	33,528 Mio €	92.0%								
Americas:			40,197	11,504 Mio €	31.0%								
NAFTA/North America:			34,785	10,436 Mio €	29.0%								
South America:			5,322	1,068 Mio €	3.0%								
Asia-Pacific:			18,759	7,847 Mio €	21.0%								
Africa:			627	469 Mio €	1.0%								
Europe:			88,304	16,698 Mio €	46.0%	Press Releases: https://press.zf.com/press/de/start/homepage.html ; Financial Reports: http://www.zf.com/financialreports ; Career: https://www.zf.com/mobile/de/careers/careers.html							
Germany:			50,900	n.a.	n.a.								
Further Information													
Company profile:		ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. With its comprehensive technology portfolio, the company offers integrated solutions for established vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility. With its innovative portfolio, ZF is focusing on the "Next Generation Mobility" for passenger cars, commercial vehicles and industrial applications. Since May 29, 2020, the American commercial vehicle technology manufacturer and brake specialist, WABCO, has been part of the ZF Group. The formerly independent company is now part of the newly created ZF Commercial Vehicle Control Systems Division.											
Revenue split:		16% Active Safety Systems; 11% Passive Safety Systems; 5% Electronics and ADAS; 18% Car Powertrain Technology; 20% Car Chassis Technology; 9% Commercial Vehicle Technology; 7% Aftermarket; 6% E-Mobility; 8% Industrial Technology.											
Sites (production/R&D):		The company has a global workforce of 147,797 employees with approximately 240 locations in 41 countries.											
R&D facts:		In 2019, the company invested €2,652 million (2018: €2,501 million) in research and development, which is 7.3% of sales (2018: 6.7%). In the past fiscal year, the Group employed around 19,400 people in R&D (2018: 17,100).											
Main Automotive products:		Car Powertrain Technology, Car Chassis Technology; Commercial Vehicle Technology; Industrial Technology; E-Mobility; Aftermarket; Electronics and ADAS; Passive Safety Systems; Active Safety Systems.											
Main automotive competitors:		n.a.											
Sources:		Annual Report, Company information											
Annotations:													

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
			in figures only:	in figures:	In % of Total Sales:	Asin Seiki Group	AsinTakaoka Group	Asin AW Group	Advics Group	Others			
6	 Aisin Seiki CO., LTD. 2-1, Asahi-machi Kariya City Aichi-Prefecture Japan www.aisin.com FY ended: March, 31												
(6)			Mio US\$ 2019/20	34,716	34,716	100.0%	15,464	2,844	14,880	5,344	602		
			Mio US\$ 2018/19	36,618	36,618	100.0%	13,515	1,755	14,917	5,369	1,061		
			Mio US\$ 2017/18	34,872	34,872	100.0%	13,135	1,621	14,195	4,960	1,050		
			Mio Yen/¥ 2019/20	3,784,585	3,784,585	100.0%	1,685,767	310,060	1,622,194	582,610	65,644		
	Mio Yen/¥ 2018/19	4,043,110	4,043,110	100.0%	1,492,269	193,778	1,647,066	592,846	117,149				
	Mio Yen/¥ 2017/18	3,908,937	3,908,937	100.0%	1,472,370	181,750	1,621,250	547,603	115,978				
Global Footprint			Employees	Regional Sales		Board							
Total:			2019: 119,732 2018: 110,357	3,784,585 Mio ¥	100.0%	Executive President: Kiyotaka Ise; Executive Vice Presidents: Makoto Mitsuya, Toshiyuki Mizushima, Hiroaki Tatematsu; Operating Officers: Masahiro Nishikawa, Hiroshi Uenaka, Shintaro Ito, Makoto Kamiya, Hisanori Kobayashi, Katsuhiko Eguchi, Aritsune Kawasaki, Yoshio Sakamoto, Morito Oshita, Shinro Umemura, Yoshiaki Kuroyanagi, Hiroaki Nanahara, Kenji Suzuki							
Automotive:			n.a.	3,784,585 Mio ¥	100.0%	Contact: http://www.aisin.com/contact/ Annual Reports: https://www.aisin.com/investors/settlement/ Press Releases: http://www.aisin.com/news/							
Americas:			n.a.	580,200 Mio ¥	15.5%								
North America:			n.a.	580,200 Mio ¥	15.3%								
Asia-Pacific + Others:			n.a.	2,836,600 Mio ¥	75.0%								
China:			n.a.	315,200 Mio ¥	8.3%								
Japan:			n.a.	2,190,200 Mio ¥	57.9%								
Europe:			n.a.	367,500 Mio ¥	9.7%								
Germany:			n.a.	n.a.	n.a.								
Further Information													
Company profile:		Aisin Seiki was founded in 1943 and currently supplies engine, drivetrain, body and chassis, aftermarket, and other main automotive parts for various major OEM's. In addition to partaking in the automotivemarkets, Aisin also offers life&amenity products, energy systems, welfare products, and other products/services.											
Revenue split:		Sales by Customer: Toyota Group 2,309.4 Mio JPY or 61.0%; Other Manufacturers 1,355.2 Mio JPY or 35.8%, including VW & Audi 257.5 Mio JPY, Suzuki 102.5 Mio JPY, Mitsubishi 93.2 Mio JPY, Volvo 112.9 Mio JPY, Nissan 61.4 Mio JPY, PSA 142.6 Mio JPY, Honda 63.8 Mio JPY, FCA 56.5 Mio JPY, GM 32.6 Mio JPY, BMW 68.4 Mio JPY, Changan 33.6 Mio JPY, Guangzhou 34.6 Mio JPY, Others 295.6 Mio JPY.											
Sites (production/R&D):		Consolidated Subsidiaries: 216 (82 in Japan, 134 overseas). Equity Method Affiliates: 10 (6 in Japan, 4 overseas).											
R&D facts:		R&D Expenditure for FY 2019/20 was 205.8 Mio. JPY, FY 2018/19 was 202,1 Mio. JPY and FY 2017/2018 was 182,9 Mio. JPY.											
Main automotive Customers:		See Revenue split											
Main automotive products:		Manufacture and sales of automotive parts (Powertrain, Chassis & Vehicle Safety System, Body, ICT & Electronics), lifestyle- and energy-related products, and wellness-related products.											
Main automotive competitors:		Majority of Top 100 suppliers as Denso, Bosch, Magna, Continental, Johnson Controls, Delphi, Faurecia, Lear, ZF, Valeo, Visteon.											
Sources:		Annual Report, Company Information											
Annotations:													



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Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/Divisions/Main Automotive Affiliates					
7	 Hyundai Mobis Co Ltd 203, Teheran-ro Gangnam-gu Seoul, 135-977 South Korea www.mobis.co.kr FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:	Auto parts	After sales services				
Mio US\$ 2019			32,637	32,637	100.0%	26,148	6,490				
Mio US\$ 2018			31,974	31,974	100.0%	25,645	6,330				
Mio US\$ 2017			31,128	31,128	100.0%	25,031	6,097				
Mio KRW 2019			38,048,768	38,048,768	100.0%	30,483,000	7,566,000				
Mio KRW 2018			35,149,000	35,149,000	100.0%	28,191,000	6,958,000				
Mio KRW 2017			35,145,000	35,145,000	100.0%	28,261,000	6,884,000				
Global Footprint	Employees	Regional Sales		Board							
Total:	2019: 32,302 2018: 25,216	38,048,768 Mio KRW		100.0 % Chairman: Mong Koo Chung; President: Chung Kook Park Vice President: Hyungkeun Bae Directors: Ji Soo Yu: Director, Dae Soo Kim, Young Chang, Brian D. Jones							
Automotive:	232,302	38,048,768 Mio KRW		100.0%							
Americas:	n.a.	8,836,000 Mio KRW		23.2%							
NAFTA/North America:	n.a.	8,836,000 Mio KRW		23.2%							
South America:	n.a.	n.a.		n.a.							
China:	n.a.	843,000 Mio KRW		12.7%							
Korea:	n.a.	6,783,000 Mio KRW		44.1%							
Europe:	n.a.	5,284,000 Mio KRW		13.9%							
Others:	n.a.	2,303,000 Mio KRW		6.1%							
Further Information											
Company profile:	Hyundai Mobis started 1977 under the name of Hyundai Precision Industry a producer of containers. After turning its focus to the automobile sector, in the 1990s Mobis produced recreational vehicles like the Galloper and Santamo. In the late 1990s, Mobis redesigned itself as an auto parts specialist. It started to produce and supply chassis modules for Hyundai Motor and took the after-sales service parts businesses from both Hyundai and Kiamotors in late 1999. The company was renamed as Mobis. In 2009 the company merged with Hyundai Autonet.										
Sites (production/R&D):	Hyundai Mobis Co., Ltd. manufactures and sells automotive parts in 31 manufacturing sites, 24 Logistics centers, 5 technical R&D centers, 5 quality centers and 3 offices in South Korea and in North America, Mexico, South America, Australia, Southeast Asia, the Middle East and Europe.										
R&D facts:	Research and development costs recorded in profit or loss for the years ended December 31, 2019, 2018, and 2017 are W983,000, W755,000, and W687,000, respectively. There are 4,987 R&D engineers, 1,145 of them overseas.										
Main automotive Customers:	Hyundai/Kia, other customers include BMW, GM and Chrysler.										
Main automotive products:	The company offers chassis, cockpit, and front-end modules; safety products, including airbags; LED headlights; anti-lock brake system and electronics stability control products; steering parts, including steering gearboxes, steering oil pumps, and motor driven power steering products; multimedia systems; UVO systems; injection molded plastic parts, such as instrument panels, carriers, and bumpers; and steel wheel rims and decks. It also supplies after-sales service parts for vehicles.										
Main automotive competitors:	e.g.: Dana, Delphi, ZF.										
Sources:	Company Information, Web										
Annotations:											

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
8	 Bridgestone Corporation 104-8340 10-1, Kyobashi 1-chome, Chuo-ku, Tokyo Tokyo-to Japan www.bridgestone.co.jp FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:	Tires	Diversified Products				
Mio US\$ 2019			32,340	27,006	83.5%	27,006	5,333				
Mio US\$ 2018			33,059	27,543	83.3%	27,543	5,516				
Mio US\$ 2017			32,503	26,950	82.9%	26,950	5,552				
Mio Yen/¥ 2019			3,525,600	2,944,100	83.5%	2,944,100	581,400				
Mio Yen/¥ 2018			3,650,111	3,041,099	83.3%	3,041,099	609,011				
Mio Yen/¥ 2017			3,643,428	3,021,000	82.9%	3,021,000	622,400				
Global Footprint	Employees	Regional Sales		Board							
Total:	2019: 143,589 2018: 143,509	3,525,600 Mio ¥		100.0% Shuichi Ishibashi: CEO and Representative Executive Officer; Akihiro Eto: President, COO and Representative Executive Officer; Masahiro Higashi: Vice Chair and Representative Executive Officer; Paolo Ferrari: Executive Vice President and Executive Officer; Christine Karbowiak: Executive Vice President and Executive Officer; Masato Banno: Senior Vice President and Executive Officer							
Automotive:	n.a.	2,944,100 Mio ¥		83.5%							
Americas:	n.a.	1,658,000 Mio ¥		47.0%							
NAFTA/North America:	n.a.	n.a.		n.a.							
South America:	n.a.	n.a.		n.a.							
Asia-Pacific:	n.a.	540,200 Mio ¥		15.3%							
Japan:	n.a.	666,800 Mio ¥		18.9%							
Europe:	n.a.	660,400 Mio ¥		18.7%							
therefrom Germany:	n.a.	n.a.		n.a.							
Further Information											
Company profile:	The Bridgestone Group (the parent company Bridgestone Corporation and its consolidated subsidiaries) constitutes the world's largest manufacturer of tires and rubber products. The parent company was established in 1931. Today, the Bridgestone Group has manufacturing bases in 26 countries and sells products in over 150 countries worldwide. The company's subsidiary Bridgestone Europe NV/SA, has entered into an agreement with TomTom to acquire TomTom Telematics, its digital fleet solutions business, for a cash consideration of EUR 910 million. The transaction is anticipated to be completed latest in the 2nd quarter of 2019.										
Revenue split:	Tires accounted for about 84% of consolidated sales in 2019, with the remainder made up of a varied range of industrial and consumer products, together with bicycles and other sporting goods. Diversified Products accounted for about 16% of sales. Bridgestone's Global Tire Market Share: 14%.										
Sites (production/R&D):	The Bridgestone Group has 163 manufacturing plants and 16 R&D facilities in 26 countries and sells products in more than 150 countries worldwide. Bridgestone Corporation, headquartered in Tokyo, is the parent company of the group.										
R&D facts:	105.2 million Yen in 2019, 103.6 million Yen in 2018, 99.8 million Yen in 2017 and 95.4 million Yen in 2016.										
Main automotive Competitors:	Michelin, Goodyear, Continental, Pirelli, Sumitomo, Yokohama, Hankook, Cooper, Cheng Shin, Hangzhou Zhongce, Toyo, Kumho and others.										
Main automotive products:	Tires and Tubes for Passenger cars, Trucks and buses, Construction and mining vehicles, Industrial machinery, Agricultural machinery, Aircraft, Motorcycles and scooters and Others Automotive parts, Retreading materials and services, Automotive maintenance and Repair services, Raw materials for tires and Others										
Sources:	Financial Statements, Company Information										

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Comfort & Driving Assistance Systems	Powertrain Systems	Thermal Systems	Visibility Systems		
9 ▲ (10)	Valeo Valeo S.A. 43 rue Bayen 75848 Paris Cedex 17 France www.valeo.com FY ended: Dec, 31										
			Mio US\$ 2019	21,803	21,803	100.0%	4,085	5,732	5,129	6,732	
			Mio US\$ 2018	22,599	22,599	100.0%	4,421	5,951	5,338	6,735	
			Mio US\$ 2017	20,963	20,963	100.0%	4,057	4,859	5,654	6,564	
			Mio Euro/€ 2019	19,477	19,477	100.0%	3,649	5,121	4,582	6,014	
			Mio Euro/€ 2018	19,124	19,124	100.0%	3,741	5,036	4,517	5,699	
			Mio Euro/€ 2017	18,550	18,550	100.0%	3,590	4,300	5,003	5,808	
Global Footprint			Employees		Regional Sales		Board				
			2019: 114,700 2018: 113,600		19,477 Mio €	100.0%	Jacques Aschenbroich: Chief Executive Officer; Robert Charvier: Chief Financial Officer; Francisco Moreno: President, Thermal Systems Business Group; Xavier Dupont: President, Powertrain Systems Business Group; Maurizio Martinelli: President, Visibility Systems Business Group; Marc Vrecko: President, Comfort and Driving Assistance Systems Business Group;				
	Automotive:			n.a.	19,477 Mio €	100.0%	Annual Report: https://www.valeo.com/en/financial-publications-releases/ Press Releases: https://www.valeo.com/en/press-releases/ Research & Development: https://www.valeo.com/en/research-development/				
	Americas:			n.a.	5,064 Mio €	26.0%					
	NAFTA/North America:			n.a.	3,895 Mio €	20.0%					
	South America:			n.a.	1,169 Mio €	6.0%					
	Asia-Pacific*:			n.a.	3,701 Mio €	19.0%					
	China:			n.a.	2,337 Mio €	12.0%					
	Europe:			n.a.	9,154 Mio €	47.0%					
	Germany			n.a.	n.a.	n.a.					
Further Information											
	Company profile:	Valeo is an automotive supplier and partner to automakers worldwide. As a technology company, we design innovative solutions for smart mobility, with a particular focus on intuitive driving and reducing CO2 emissions. The Group also provides and distributes spare parts for automakers and independent aftermarket operators.									
	Revenue split:	see above									
	Sites (production/R&D):	Valeo has 191 plants, 59 research centers and employs 114,700 people in 33 countries worldwide.									
	R&D facts:	2019, net Research and Development expenditure totaled 2.054 million euros, or 10.2% of total sales respectively 1,560 million euros, or 8.2% in 2018.									
	Main automotive Customers:	Valeo's top customers are: BAIC Group; BMW Group; Chery Group; Daimler Group; FAW Group; Fiat Chrysler Automobiles; Ford Group; Geely Group; General Motors Group; Great Wall Motors; Honda Group; Hyundai Group; Marcopolo; Mazda Motors; PSA Group; Renault-Nissan-Mitsubishi; SAIC Group; Subaru; Suzuki; Tata Group; Toyota Group; Volkswagen Group; Volvo Group.									
	Main automotive products:	Powertrain Systems (Transmissions, Engine and Electrical Systems), Thermal Systems (Climate Control, Engine Cooling, Compressors), Comfort & Driving Assistance Systems (Interior Controls, Security Systems), Visibility Systems (Lighting Systems, Wiper Systems).									
	Main automotive competitors:	The Group's main competitors are the main automotive suppliers in the world specialized in the automotive industry, like Robert Bosch, Continental, Denso, Delphi, Visteon or Marelli; as well as other more specialist manufacturers such as Behr, Tokai Rika, Koito, Remy or LuK.									
	Sources:	Annual Report									
	Annotations:	*excluding China, including the Middle East									

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Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates								
			in figures only:	in figures:	In % of Total Sales:	Interior and exterior trim	Metal forming and mold	Functional parts	Electronic device	Hot-worked parts	Headquarters and offset			
10	 Huayu Automotive Systems No. 489 Weihai Road Shanghai, SHA 200041 China www.hasco-group.com FY ended: Dec, 31													
(9)			Mio US\$ 2019	20,894	20,894	100.0%	14,796	1,721	4,392	734	110	911		
			Mio US\$ 2018	23,781	23,781	100.0%	16,223	2,031	5,164	743	142	522		
			Mio US\$ 2017	20,792	20,792	100.0%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
			Mio RMB 2019	144,024	144,024	100.0%	102,210	11,890	30,340	4,850	760	6,020		
			Mio RMB 2018	157,170	157,170	100.0%	107,220	13,420	34,130	4,910	940	3,450		
			Mio RMB 2017	140,487	140,487	100.0%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
			Global Footprint	Employees	Regional Sales		Board							
			Total:	2019: 130,000 2018: n.a.	144,024 Mio RMB		100.0%	Haitao Zhang: GM & Director ; Qiwei Mao: Sec. of the Board of Directors & Director ; Wei Jian Mao: CFO ; Jun Hua Wang: Chief Accountant ; Zhengang Ma: Deputy General Manager						
			Automotive:	n.a.	14,024 Mio RMB		100.0%	Press Releases: http://www.hasco-group.com/en/news/news.html Annual Report: http://www.hasco-group.com/en/IR/index.html						
	Americas:	n.a.	n.a.		n.a.									
	NAFTA/North America:	n.a.	n.a.		n.a.									
	South America:	n.a.	n.a.		n.a.									
	Asia-Pacific:	n.a.	n.a.		n.a.									
	Japan:	n.a.	n.a.		n.a.									
	Europe:	n.a.	n.a.		n.a.									
	Germany:	n.a.	n.a.		n.a.									
	Further Information													
	Company profile:	HUAYU Automotive Systems Company Limited (HASCO) engages in the research and development, production, and marketing of automotive components. The company was founded in 1992 as Shanghai Bus Industry (Group) Co., Ltd. and is based in Shanghai, China. HUAYU Automotive Systems Company Limited operates as a subsidiary of SAIC Motor Corporation Limited.												
	Sites (production R&D):	HASCO has a complete supply chain with 362 R&D, manufacturing and service bases in mainland China covering 23 provinces, municipalities, autonomous regions and special administrative regions, and 95 manufacturing (including R&D) bases in the United States, Germany, Thailand, Russia, Australia, the Czech republic, Slovakia, India, Mexico, Canada, South Africa, Japan, Spain, Italy, Brazil, Ireland, Malaysia, Indonesia and other countries.												
	R&D facts:	n.a.												
	Main automotive Customers:	SAIC Volkswagen, SAIC General Motors, SAIC Pkw GM Wuling, Dongfeng Nissan, FAW-Volkswagen, Anhui Jianghuai, Beijing Benz, Peking Hyundai, Guangzhou Automobil. The main customers of operating income are mainly concentrated in the vehicle companies affiliated with SAIC Group.												
	Main automotive products:	The Company's products include interior and exterior trims for automobiles, metal stampings and molds, functional parts, electronic and electrical parts and hot-working products, among other. The company's New Energy Vehicle segment offers electronic A/C products, driving motors, power steering products, start-stop systems, etc.												
	Main automotive competitors:	n.a.												
	Sources:	Company Information, Bloomberg												
	Annotation:													



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates								
			in figures only:	in figures:	In % of Total Sales:	Automotive	Road Transportation	Specialties						
11	 Michelin S.A. 23, place des Carmes- Déchaux, 63040 Clermont-Ferrand Cedex 9, France www.michelin.com FY ended: Dec, 31													
(13)			Mio US\$ 2019	27,017	20,484	75.8%	13,266	7,218	6,533					
			Mio US\$ 2018	26,030	20,316	78.0%	13,400	6,915	5,715					
			Mio US\$ 2017	24,817	21,022	84.7%	14,103	6,920	3,795					
			Mio Euro/€ 2019	24,135	18,299	75.8%	11,851	6,448	5,836					
			Mio Euro/€ 2018	22,028	17,192	78.0%	11,340	5,852	4,836					
			Mio Euro/€ 2017	21,960	18,602	84.7%	12,479	6,123	3,358					
			Global Footprint	Employees	Regional Sales		Board							
			Total:	2019: 127,200 2018: 111,100	24,135 Mio €		100.0%	Florent Menegaux: Managing Chairman ; Éric Philippe Vinessé: Executive Vice President, Research & Development ; Jean-Christophe Guérin: Executive Vice President, Manufacturing ; Yves Chapot: Manager & Chief Financial Officer						
			Automotive:	n.a.	18,299 Mio €		75.8%	Contact: https://www.michelin.com/eng/general-info/contact-michelin Annual Reports: https://www.michelin.com/en/finance/regulated-information Press Releases: https://www.michelin.com/en/press-releases/						
	Americas:	n.a.	n.a.		n.a.									
	North America:*	n.a.	8,902 Mio €		36.9%									
	South America:	n.a.	n.a.		n.a.									
	Asia and Rest of the world:	n.a.	6,386 Mio €		26.5%									
	Other Regions:	n.a.	n.a.		n.a.									
	Europe:	n.a.	8,847 Mio €		36.7%									
	therefrom France:	n.a.	2,113 Mio €		8.8%									
	Further Information													
	Company profile:	Michelin manufactures and sells tires for all kinds of vehicles, publishes maps and guides and operates a number of digital services in more than 170 countries. The Michelin Group is organized into eight product lines, each one dedicated to an area of activity with its own marketing, development, production and marketing resources.												
	Revenue split:	The Group's operations are organized into three operating segments: Automotive, Road Transportation and Specialties dedicated to serving their global markets with products and services offered through 14 Business Lines.												
	Sites (production/R&D):	With 7 R&D centers in different parts of the world, 69 tire manufacturing facilities and sales agencies in 171 countries, the Michelin Group has a strong foothold on every continent.												
	R&D facts:	Research and development expenses 687 Mio Euro as 2,8% of sales.												
	Main automotive Customers:	All major OEMs and the replacement markets.												
	Main automotive products:	Tires for cars, vans, trucks, farm machinery, handling, mining and construction equipment, motorcycles, scooters, bicycles, aircraft, subway trains, tramways and space shuttles, with innovative solutions tailored to widely varying expectations and conditions of use.												
	Main automotive competitors:	Competitors in the global tire market like Bridgestone, Michelin, Goodyear, mid-sized and other tire makers.												
	Sources:	Annual Report, Company Information												
	Annotations:	*incl. Mexico; **Africa, India, Middle-East												



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates				
12 ▶ (12)	 Faurecia S.A. 2 rue Hennape 92735 Nanterre Cedex France www.faurecia.com FY ended: Dec, 31		Mio US\$ 2019	19,899	19,899	100.0%	7,806	6,011	5,210	863
			Mio US\$ 2018	20,709	20,709	100.0%	8,789	6,466	5,454	n.a.
			Mio US\$ 2017	22,808	22,808	100.0%	8,061	6,030	8,716	n.a.
			Mio Euro/€ 20189	17,768	17,768	100.0%	6,973	5,370	4,654	771
			Mio Euro/€ 2018	17,525	17,525	100.0%	7,438	5,472	4,615	n.a.
			Mio Euro/€ 2017	20,182	20,182	100.0%	7,133	5,336	7,713	n.a.
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2019: 115,496 2018: 114,693	17,768 Mio €	100.0%	Patrick Koller: Chief Executive Officer (CEO); Michel Favre: Executive Vice-President, Group Chief Financial Officer; Yann Brillat-Savarin: Executive Vice-President, Group Strategy; Kate Philipps: Executive Vice-President, Group Communications; Patrick Popp: Executive Vice-President, Faurecia Interiors; Mathias Miedreich: Executive Vice-President, Faurecia Clean Mobility; Eelco Spoelder: Executive Vice-President, Faurecia Seating; François Tardif: Executive Vice-President, Faurecia China; Jean-Paul Michel: Executive Vice-President, Faurecia Clarion Electronics; Hagen Wiesner: Executive Vice-President, in Charge of Cockpit Modules					
	Automotive:	n.a.	17,768 Mio €	100.0%	Annual Report: https://www.faurecia.com/en/investors/documents/amf-regulated-information Press Releases: https://www.faurecia.com/en/newsroom					
	Americas:	n.a.	5,179 Mio €	29.0%						
	NAFTA/North America:	n.a.	4,483 Mio €	25.0%						
	South America:	n.a.	696 Mio €	4.0%						
Asia-Pacific:	n.a.	3,766 Mio €	21.0%							
therefrom China:	n.a.	2,595 Mio €	15.0%							
Europe:	n.a.	8,641 Mio €	49.0%							
Rest of the world:	n.a.	181 Mio €	1.0%							
Further Information										
Company profile:	Faurecia has grown to become a major player in the global automotive industry. With around 300 sites including 35 R&D Centers and 122,000 employees in 37 countries, Faurecia is now a global leader in its four areas of business: Seating, Interiors, Clarion Electronics and Clean Mobility. In 2019, the group posted sales of €17.8 billion.									
Revenue split:	n.a.									
Sites (production/R&D):	300 sites in 37 countries / 37 R&D centres									
R&D facts:	R&D expenses reached €420.0 million (2.4% of sales) compared to €298.8 million in 2018. These €420.0 million in 2019 include €63.7 million for Clarion Electronics.									
Main automotive Customers:	Faurecia works with nearly every major automaker in the world.									
Main automotive products:	Seating (design and manufacture of complete vehicle seats, seating frames and adjustment mechanisms); Interiors (design and manufacture of instrument panels, complete cockpits, door panels and modules, and acoustic systems); Clean Mobility (design and manufacture of exhaust systems); Clarion Electronics (Smart cockpit electronics & software integration), integrating Clarion, Parrot and Coagent activities (the lasts being part of Interiors in 2018). 2018 figures have been restated accordingly.									
Main competitors:	LEAR, Magna, Conti, Aptiv, Plastic Omnium, Valeo, Adient, Denso, AISIN, Tenneco, Mobis, Grupo Antolin, SMP Automotive, Brose, Grammar, Hella, ZF, Eberspächer, Visteon.									
Sources:	Annual Report									



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
13 ▼ (11)	 Lear Corporation 21557 Telegraph Road Southfield Michigan USA www.lear.com FY ended: Dec, 31		Mio US\$ 2019	19,810	19,810	100.0%	15,097	4,713				
			Mio US\$ 2018	21,148	21,148	100.0%	16,022	5,126				
			Mio US\$ 2017	20,467	20,467	100.0%	15,873	4,594				
			Global Footprint	Employees	Regional Sales		Board					
			Total:	2019: 164,100 2018: 169,000	19,810 Mio US\$	100.0%	Shari L. Burgess: Vice President and Treasurer; Jason M. Cardew: Senior Vice President and Chief Financial Officer; Alicia J. Davis: Senior Vice President, Corporate Development and Investor Relations; Thomas A. DiDonato: Senior Vice President and Chief Administrative Officer; Carl A. Esposito: Senior Vice President and President, E-Systems; Frank C. Orsini: Executive Vice President and President, Seating; Raymond E. Scott: President and Chief Executive Officer					
			Automotive:	164,100	19,810 Mio US\$	100.0%	Annual Report: http://ir.lear.com/ ; Press Releases: https://lear.com/Site/Company/Press-Room/ ; Suppliers Contact: https://lear.com/Site/Suppliers/					
	Americas:	77,500	80,057 Mio US\$	40.7%								
	NAFTA/North America:	n.a.	7,366 Mio US\$	37.2%								
	South America:	n.a.	691 Mio US\$	3.5%								
	Asia:	29,800	3,968 Mio US\$	20.0%								
	therefrom China:	n.a.	2,580 Mio US\$	13.0%								
	Europe and Africa:	56,800	7,786 Mio US\$	39.3%								
Germany:	n.a.	1,699 Mio US\$	8.6%									
Further Information												
Company profile:	Lear Corporation is a leading Tier 1 supplier to the global automotive industry and was incorporated in Delaware in 1987. The Company was founded in Detroit in 1917 as American Metal Products. Through a management-led buyout in 1988, Lear Corporation established itself as a privately-held seat assembly operation for the North American automobile market. Lear completed an initial public offering in 1994 and developed into a global supplier through organic growth and a series of acquisitions. In April 2017, Lear acquired Grupo Antolin's automotive seating business. In January 2018, the company acquired Israel-based EXO Technologies, a leading developer of differentiated GPS technology.											
Revenue split:	Seating net sales were \$15.1 billion for the year ended December 31, 2019, as compared to \$16.0 billion for the year ended December 31, 2018 - a decrease of \$925 million or (6%). E-Systems net sales 2019 were \$4.7 billion, as compared to \$5.1 billion for the year before, a decrease of \$414 million or 8%.											
Sites (production/R&D):	Lear has 257 manufacturing, engineering and administrative locations in 39 countries and is continuing to grow its business in all automotive producing regions of the world. Its manufacturing footprint reflects more than 143 facilities in 22 low cost countries.											
R&D facts:	Engineering and development costs charged to selling, general and administrative expenses totaled \$151.2 million, \$153.5 million and \$147.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. Worldwide, Lear has approximately 2,300 patents and patent applications pending.											
Main automotive Customers:	The top five customers of our Seating segment are: General Motors, Daimler, Volkswagen, Ford and Fiat Chrysler. The top five customers of our E-Systems segment are: Ford, Renault-Nissan, General Motors, Jaguar Land Rover and Volkswagen. In 2019 General Motors and Ford accounted for 18% and 14% of net sales.											
Main automotive products:	Two product operating segments: seat and electrical systems. The Seating segment consists of the design, development, engineering, just-in-time assembly and delivery of complete seat systems, as well as the design, development, engineering and manufacture of all major seat components, including seat covers and surface materials such as leather and fabric, seat structures and mechanisms, seat foam and headrests. The E-Systems segment consists of the design, development, engineering and manufacture of complete electrical distribution systems, as well as electronic control modules, electrification products and connectivity products.											
Main automotive competitors:	Primary competitor in seating segment globally is Adient, plc. Other competitors in this segment include Faurecia S.A., Toyota Boshoku Corporation, TS Tech Co., Ltd. and Magna International Inc., which have varying market presence depending on the region, country or automotive manufacturer. Peugeot S.A., Toyota Motor Corporation and Honda Motor Co. Ltd. hold equity ownership positions in Faurecia S.A., Toyota Boshoku Corporation and TS Tech Co., Ltd., respectively. Major competitors in electrical distribution systems include Aptiv PLC, Leoni AG, Molex Incorporated (a subsidiary of Koch Industries Inc.), Sumitomo Corporation, TE Connectivity and Yazaki Corporation. Major competitors in electronic modules, including connectivity solutions, include Aptiv PLC, Continental AG, Denso Corporation, Harman International Industries, Incorporated (acquired by Samsung Electronics Co. Ltd. in 2017), Hella AG, Robert Bosch GmbH, Valeo S.A. and Visteon Corporation.											
Sources:	Annual Report											



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
			in figures only:	in figures:	In % of Total Sales:	Clean Air	Ride Performance	Powertrain	Motorparts			
14 ▲ (26)	 Tenneco Inc. 500 North Field Drive Lake Forest Illinois 60045, USA www.tenneco.com FY ended: Dec, 31											
			Mio US\$ 2019	17,450	17,450	100.0%	7,121	2,754	4,408	3,167		
			Mio US\$ 2018	11,763	11,763	100.0%	6,707	2,164	1,112	1,780		
			Mio US\$ 2017	9,274	9,274	100.0%	6,216	1,807	n.a.	1,251		
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 78,000 2018: 81,000	17,450 Mio US\$		100.0%	Brian J. Kessler: Chief Executive Officer; Jason M. Hollar: Executive Vice President Finance and Chief Financial Officer; Peng (Patrick) Guo: Executive Vice President and President Clean Air; Rainer Jueckstock: Executive Vice President and President Powertrain; Bradley S. Norton: Executive Vice President and President Original Equipment; Scott Usitalo: Executive Vice President and President Motorparts;						
	Automotive:		78,000	17,450 Mio US\$	100.0%							
	Americas:		n.a.	7,162 Mio US\$	41.0%							
	NAFTA/North America:		n.a.	7,162 Mio US\$	41.0%							
	Others:		n.a.	3,711 Mio US\$	21.3%							
	Asia-Pacific:		n.a.	2,852 Mio US\$	16.3%							
	China:		n.a.	2,377 Mio US\$	13.6%							
	Europe*:		n.a.	3,725 Mio US\$	21.3%							
	Germany:		n.a.	2,227 Mio US\$	12.8%							
	Further Information											
	Company profile:	Tenneco was incorporated in Delaware in 1996 and is one of the world's largest designers, manufacturers and marketers of clean air and ride performance products and systems for the automotive and commercial vehicle original equipment markets and the aftermarket. Tenneco markets its products principally under the Monroe, Walker, Gillet and Clevite Elastomer brand names. October 2018 Tenneco acquired Federal-Mogul, a leading global supplier to original equipment manufacturers and the aftermarket. As a result of the Acquisition, the number of our reportable segments increased to five segments: Tenneco announced its intention to separate the combined businesses into two independent companies that will establish an aftermarket & ride performance company and a powertrain technology company.										
	Revenue split:	Consolidated revenues were \$17,450 million, an increase of \$5,687 million, or 48%, for the year ended December 31, 2019.										
	Sites (production/R&D):	Clean Air Segment operates 59 clean air manufacturing facilities worldwide. Powertrain Segment operates 85 manufacturing sites worldwide. Motorparts segment operates 17 manufacturing sites and Ride Performance segment operates 40 ride performance manufacturing facilities worldwide.										
	R&D facts:	Engineering, research, and development expense was \$324 million for the year ended December 31, 2019 compared to \$200 million for the year ended December 31, 2018. The increase of \$124 million was due primarily to the Acquisitions. Through acquisition of Federal-Mogul, Tenneco acquired in excess of 6,900 patents and more than 6,700 active trademark registrations and applications worldwide.										
	Main automotive Customers:	Tenneco serves more than 80 different OEMs and commercial truck and off-highway engine manufacturers worldwide, and their products were included on six of the top 10 passenger car models produced for sale in Europe and nine of the top 10 light truck models produced for sale in North America. General Motors Company and Ford Motor Company accounted for 10% or more of our net sales in any of the last three years.										
	Main automotive products:	Clean Air: Complete emission control systems, fabricated manifolds, manifold-converter modules, catalytic converters, mufflers and resonators, diesel particulate filter systems, SCR, NOx abatement systems, exhaust heat exchangers, exhaust isolators and hanging systems. OE-Ride Control: Shocks and struts, suspension bushings, coil, air and leaf springs, torque rods, engine and body mounts, suspension modules and systems, control arms, bars and links, cabin dampers, Continuously Controlled Electronic Suspension systems, antiroll systems, seat dampers. Aftermarket-Emission Control: Mufflers, pipes, tubing, mounting components, catalytic converters, headers. Aftermarket-Ride Control: Shock absorbers, struts and strut assemblies, cartridges, mounting kits, torque rods, suspension bushings, engine mounts, coil springs, suspension lift kits, brake pads.										
	Main automotive competitors:	OE-Emission Control: EMCON Technologies, Faurecia, Eberspächer, Bosal, Nelson (Cummins Inc.); Original Equipment-Ride Control: ZF Sachs, Delphi, Meritor, KYB, Magneti Marelli; Aftermarket-Emission Control: OE Service, Bosal, AP Exhaust Products, International Muffler Company, Klarius Group; Aftermarket-Ride Control: Meritor, KYB, OE Service, ZF Sachs.										
	Sources:	Annual Report										
	Annotations:	*Europe, South America and India										



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
			in figures only:	in figures:	In % of Total Sales:							
15 ▼ (14)	 Adient plc 25-28 North Wall Quay IFSC Dublin 1 Ireland www.adient.com FY ended: September 30											
			Mio US\$ 2019	16,526	16,526	100.0%						
			Mio US\$ 2018	17,439	17,439	100.0%						
			Mio US\$ 2017	16,213	16,213	100.0%						
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 83,000 2018: 85,000	16,526 Mio US\$		100.0%	Doug Del Grosso: President and Chief Executive Officer; Michel Berthelin: Vice President, EMEA; Renee McLeod: Vice President and Chief Human Resources Officer; Kelli Carney: Vice President and Chief Purchasing Officer; Jeff Stafeil: Executive Vice President and Chief Financial Officer;						
	Automotive:		n.a.	16,526 Mio US\$	100.0%							
	Americas:		n.a.	7,785 Mio US\$	47.1%							
	EMEA:		n.a.	6,675 Mio US\$	40.4%							
	Asia:		n.a.	2,377 Mio US\$	14.4%							
	Germany:		n.a.	n.a.	n.a.							
	Other European:		n.a.	n.a.	n.a.							
	Other foreign:		n.a.	n.a.	n.a.							
	Further Information											
	Company profile:	Adient is a global seat supplier with the capability to design, develop, engineer, manufacture, and deliver complete seat systems and components in every major automotive producing region in the world. Adient also participates in the automotive interiors market, which includes production of instrument panels, floor consoles, door panels, overhead consoles, cockpit systems, decorative trim and other automotive interior products, primarily through its joint venture in China, Yanfeng Global Automotive Interior Systems Co., Ltd.										
	Revenue split:	n.a.										
	Sites (production/R&D):	Adient operates in 220 wholly- and majority-owned manufacturing or assembly facilities, with operations in 33 countries.										
	R&D facts:	R&D-expenditures for the years ended September 30, 2019 and 2018 were \$454 million and \$513 million, respectively.										
	Main automotive Customers:	We work with the world's largest automotive manufacturers, supplying parts for the most important automobile brands across the globe. Customers include Fiat Chrysler, GM, Ford, Jaguar/Land Rover, BMW, Volvo, Nissan, Toyota, yundai/Kia, Honda, VW, Mercedes, Renault, Peugeot, Citroen, and various Chinese OEMs.										
	Main automotive products:	Adient designs and manufactures a full range of seating systems and components for passenger cars, commercial vehicles and light trucks, including vans, pick-up trucks and sport/crossover utility vehicles. Adient's technologies extend into virtually every area of automotive seating solutions including complete seating systems, frames, mechanisms, foam, head restraints, armrests, trim covers and fabrics.										
	Main automotive competitors:	Competitors include Lear, Faurecia, Toyota Boshoku and Magna.										
	Sources:	Annual Report, Company Information										
	Annotations:											



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
			in figures only:	in figures:	in % of Total Sales:	Automotive	Information and Communication	Electronics	Environment and Energy	Industrial Materials and Others		
16 ▼ (15)	 Sumitomo Electric Industries Ltd. Kitahama 4-chome Chuo-ku Osaka Japan www.sei.co.jp FY ended: March, 31		Mio US\$ 2019/20	28,501	15,444	54.2%	15,444	1,994	2,313	6,536	3,039	
			Mio US\$ 2018/19	28,783	15,482	53.8%	15,482	1,888	2,073	6,881	3,241	
			Mio US\$ 2017/18	27,497	14,559	52.9%	14,559	1,966	2,197	6,405	3,061	
			Mio Yen/¥2019/20	3,107,027	1,683,630	54.2%	1,683,630	217,401	252,170	712,543	331,350	
			Mio Yen/¥2018/19	3,177,985	1,709,426	53.8%	1,709,426	208,420	228,933	759,786	357,824	
			Mio Yen/¥2017/18	3,082,247	1,631,952	52.9%	1,631,952	220,326	246,319	717,972	343,126	
			Global Footprint	Employees	Regional Sales		Board					
			Total:	2019: 271,796 2018: 255,133	3,107,027 Mio ¥	100.0%	Chairman & CEO: Masayoshi Matsumoto; President & COO: Osamu Inoue; Executive Vice Presidents: Mitsuo Nishida, Nozomi Ushijima; Senior Managing Directors: Yoshitomo Kasui, Akira Nishimura, Hideo Hato; Managing Directors: Junji Ito, Masaki Shirayama, Nobuyuki Kobayashi					
			Automotive:	n.a.	1,683,630 Mio ¥	54.2%	Annual Report: https://global-sei.com/ir/library/ Press Releases: https://global-sei.com/company/press/ Suppliers: https://global-sei.com/globalnet/pop/germany/index.html					
			Americas:	n.a.	543,237 Mio ¥	17.5%						
NAFTA/North America:	n.a.	n.a.	n.a.									
South America:	n.a.	n.a.	n.a.									
Asia-Pacific:	n.a.	n.a.	n.a.									
Japan:	n.a.	1,975,232 Mio ¥	63.6%									
Europe and others:	n.a.	336,098 Mio ¥	10.8%									
Germany:	n.a.	n.a.	n.a.									
Further Information												
Company profile:	The Sumitomo Electric Group operates globally in the five fields of Automotive, Information&Communications, Electronics, Electric Wire & Cable, Energy and Industrial Materials. Established in April 1897, incorporated in December 1920, the group includes today approximately over 390 subsidiaries and affiliates in more than 40 countries around the world, mainly in Asia, North America and Europe.											
Revenue split:	Around 60% of company's sales were generated overseas.											
Sites (production/R&D):	The Sumitomo Electric Group comprises approximately 390 group companies in around 40 countries in Asia, Americas and Europe, with over 270,000 employees.											
R&D facts:	Research and development expenses in FY 2019/2020 are 125.4 million yen, there from 78.5 million yen in Automotive segment; FY 2018/2019 129.6 million yen, there from 81.9 million yen in Automotive segment. R&D centres: Itami, Komaki, Osaka, Suzuka, Yokkaichi, Yokohama (Japan); Germany, USA.											
Main automotive Customers:	All major automotive manufacturers worldwide.											
Main automotive products:	Wiring harnesses and electrical components, steel cords for tire reinforcement, steel wires for springs, wiring materials, optical lenses for infrared devices, abrasion-resistant parts/materials, magnet wires, heat shrink tubing and heat-resistant tubing/tapes, aluminum materials, sintered ZnS lenses and Polycrystalline transparent spinel, products for electronic devices, sintered parts, EV Quick-Charger Connector Assembly.											
Main automotive competitors:	Yazaki, Delphi, Dräxлмаier, Leoni, Takata, etc.											
Sources:	Company Information											
Annotations:												



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
			in figures only:	in figures:	in % of Total Sales:							
17 ▲ (18)	 Yazaki Corporation Mishuku 1500 Susono-shi Shizuoka-ken 410-1194 Japan www.yazaki-group.com FY ended: June, 20		Mio US\$ 2018/19	17,845	15,168	85.0%*						
			Mio US\$ 2017/18	17,449	14,832	85.0%*						
			Mio US\$ 2016/17	15,302	13,619	89.0%*						
			Mio Yen/¥ 2018/19	1,945,400	1,653,590	85.0%*						
			Mio Yen/¥ 2017/18	1,926,600	1,637,610	85.0%*						
			Mio Yen/¥ 2016/17	1,715,300	1,526,600	89.0%*						
			Global Footprint	Employees	Regional Sales		Board					
			Total:	2018/19: 249,667 2017/18: 306,118	1,945,400 Mio ¥	100.0%	Yasuhiko Yazaki: Chairman; Shinji Yazaki: President;					
			Automotive:	n.a.	1,653,590 Mio ¥	85.0%	Contact: https://www.yazaki-group.com/global/contact/ Annual Reports: https://www.yazaki-group.com/global/about/ar.html					
			Americas:	83,957	589,456 Mio ¥	30.3%						
NAFTA/North America:	n.a.	n.a.	n.a.									
South America:	n.a.	n.a.	n.a.									
Asia:	97,635	338,500 Mio ¥	17.4%									
Japan:	18,557	678,945 Mio ¥	34.9%									
Europe and Africa:	49,518	338,500 Mio ¥	17.4%									
Germany:	n.a.	n.a.	n.a.									
Further Information												
Company profile:	Yazaki, privately owned, was founded in 1941 and supplies wire harnesses to automobile makers around the world. The Yazaki Group has three business operations: Automotive Sector, Energy System and New Business-Socially Responsible Business. Yazaki manufactures and sells automotive parts and living environment equipments (electric wires, gas equipment, air-conditioning & solar equipment) in Japan and manufactures automotive wire harnesses, meters, electronic components and other automotive parts overseas.											
Revenue split:	n.a.											
Sites (production/R&D):	Global locations (Sales/Production/R&D): 45 countries, 167 companies, 596 locations (as of June 2018)											
R&D facts:	Yazaki extends its global network of R&D, manufacturing and sales, linking all operations in real-time to all corners of the world.											
Main automotive Customers:	Toyota, Honda, Mitsubishi, Mazda, Isuzu,FHI, Suzuki, BMW, Ford, GM, PSA, Renault/Nissan, VW, GTT, Opel, Fiat/Chrysler, JLR, Volvo.											
Main automotive products:	Wire harnesses, Meter & Electronics and Components related to electric distribution system including HEV/EV components.											
Main automotive competitors:	Sumitomo, Lear, Visteon, Leoni, Nexans, Dräxлмаier, ZF, SEWS, Tyco Electronics, Molex, SV, JCI and others											
Sources:	Annual Report, Web, Company Information											
Annotations:	*Estimate, Yazaki Corporation does not release an automotive share of the total sales in the fiscal year 2018/19											



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	In % of Total Sales:						
18 ▲ (54)	 Marelli Holding SpA V.le Aldo Borletti 61/63 20011 Corbetta Milan Italy www.marelli.com FY ended: Dec, 31										
			Mio US\$ 2019	14,999	14,999	100.0%					
			Mio US\$ 2018*	5,906	5,906	100.0%					
			Mio US\$ 2017*	5,881	5,881	100.0%					
			Mio Euro/€ 2019	13,400	13,400	100.0%					
			Mio Euro/€ 2018*	4,998	4,998	100.0%					
			Mio Euro/€ 2017*	5,204	5,204	100.0%					
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 60,000 2018: n.a.	13,400 Mio €		100.0% President and Chief Executive Officer: Beda Bolzenius						
	Automotive:		n.a.	13,400 Mio €	100.0%						
	Americas:		n.a.	n.a.	n.a.						
	NAFTA/North America:		n.a.	n.a.	n.a.						
	South America:		n.a.	n.a.	n.a.						
	Asia-Pacific:		n.a.	n.a.	n.a.						
	Japan:		n.a.	n.a.	n.a.						
	Europe:		n.a.	n.a.	n.a.						
	Germany:		n.a.	n.a.	n.a.						
	Further Information										
	Company profile:	With around 60,000 employees worldwide, the Marelli footprint includes 170 facilities and R&D centers across Asia, the Americas, Europe, and Africa, generating revenues of 13.4 Billion Euro (JPY 1,541 billion) in 2019. Magneti Marelli was part of FCA and in early 2019 was bought by the Japanese automotive company Calsonic Kansei and renamed to Magneti Marelli CK Holdings Ltd. Together that would be one of the world's largest auto parts suppliers. In May 2019 Calsonic Kansei and Magneti Marelli unite under new worldwide brand: Marelli. Marelli brings together two successful global automotive manufacturers from Italy and Japan, with a world-leading reputation for innovation and manufacturing excellence (Monozukuri).									
	Revenue split:	n.a.									
	Sites (production/R&D):	New Marelli operates out of 170 facilities and R&D centers across Europe, Japan, the Americas, and Asia Pacific, and has operational headquarters in Saitama, Japan and Corbetta, Italy									
	R&D facts:	n.a.									
	Main automotive Customers:	Marelli supplies car manufacturers such as Renault, Citroën, Peugeot, Fiat Group, Ford, Volkswagen, Audi, Seat, BMW-Group, Daimler, GM/Opel, Volvo, Saab, Nissan, Toyota and Daewoo.									
	Main automotive products:	n.a.									
	Main automotive competitors:	na.									
	Sources:	Company Information									
	Annotations:	*figures only from former Magneti Marelli; Calsonic Kansei had sales of 8,126 Mio US\$ in the FY 2018/19.									



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	In % of Total Sales:	Americans Tire	Europe, Middle East and Africa Tire	Asia Pacific Tire			
19 ▼ (16)	 The Goodyear Tire & Rubber Company 200 Innovation Way Akron Ohio 44316-0001/USA www.goodyear.com FY ended: Dec, 31										
			Mio US\$ 2019	14,745	14,745	100.0%	7,922	4,708	2,115		
			Mio US\$ 2018	15,475	15,475	100.0%	8,168	5,090	2,217		
			Mio US\$ 2017	15,377	15,377	100.0%	8,212	4,928	2,237		
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 63,000 2018: 64,000	14,745 Mio US\$		100.0% Richard J. Kramer: Chairman of the Board, CEO and President; Darren R. Wells: Executive Vice President and Chief Financial Officer; Stephen R. McClellan: President, Americas; Christopher R. Delaney: President, Europe, Middle East and Africa; Ryan G. Patterson: President, Asia Pacific; Jonathan Bellissimo: Senior Vice President, Global Operations and Technology; Christopher P. Helse: Vice President and Chief Technology Officer						
	Automotive:		63,000	14,745 Mio US\$	100.0%						
	Americas:		n.a.	7,922 Mio US\$	53.7%						
	NAFTA/North America:		n.a.	6,489 Mio. US\$	n.a.						
	South America:		n.a.	1,433 Mio. US\$	n.a.						
	Asia-Pacific:		n.a.	2,115 Mio US\$	14.3%						
	Japan:		n.a.	n.a.	n.a.						
	Europe:*		n.a.	4,708 Mio US\$	31.9%						
	Further Information										
	Company profile:	The Goodyear Tire & Rubber Company is an Ohio corporation organized in 1898. The Company is one of the world's leading manufacturers of tires, with one of the most recognizable brand names in the world and operations in most regions of the world. Goodyear's principal business is the development, manufacture, distribution and sale of tires and related products and services worldwide. The company manufactures and markets numerous lines of rubber tires eg. for automobiles, trucks and buses.									
	Revenue split:	Net sales in 2019 of \$14,745 million decreased \$730 million, or 4.7%, compared to \$15,475 million in 2018. Approximately 85% of the companies sales in 2019, 84% in 2018 and 87% in 2017 were for tire units. Sales of chemical products and natural rubber to unaffiliated customers were 3% in 2019, 4% in 2018 and 3% in 2017 of consolidated sales (5%, 7% and 6% of Americas total sales in 2019, 2018 and 2017, respectively). For the year ended December 31, 2018, Goodyear operated its business through three operating segments representing regional tire businesses: Americas; Europe, Middle East and Africa (EMEA); and Asia Pacific. Goodyear owns, controls or uses approximately 1,500 different trademarks, including several using the word „Goodyear“ or „Dunlop“.									
	Sites (production/R&D):	Americas: six plants in the United States, two in Canada and five in Brazil, Chile, Colombia, Mexico and Peru. EMEA: thirteen plants in France, Germany, Luxembourg, Poland, Slovenia, South Africa and Turkey. Asia Pacific: seven plants in China, India, Indonesia, Japan, Malaysia and Thailand.									
	R&D facts:	Research and development expenditures were \$430 million, \$424 million and \$406 million in 2019, 2018 and 2017, respectively. Goodyear owns approximately 1,800 product, process and equipment patents issued by the United States Patent Office and approximately 3,400 patents issued or granted in other countries around the world.									
	Main automotive Customers:	All major OEMs and aftermarket.									
	Main automotive products:	The company manufactures and sells tires under the Goodyear, Dunlop, Kelly, Debica, Sava and Fulda brands and various other Goodyear owned house brands, and the private label brands of certain customers.									
	Main automotive competitors:	Bridgestone, Michelin, Continental, Cooper, Hankook, Kumho, Nexen, Pirelli, Sumitomo, Toyo, Yokohama and various regional tire manufacturers.									
	Sources:	Annual Report, Form 10-K									
	Annotations:	*Europe, Middle East, Africa									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
			in figures only:	in figures:	In % of Total Sales:	Materials	Industrial Solutions	Surface Technologies				
22 ▼ (21)	 BASF SE Carl-Bosch-Straße 38 67056 Ludwigshafen Rhineland-Palatinate Germany www.basf.com FY ended: Dec, 31											
			Mio US\$ 2019	66,398	14,001	21.0%	12,835	9,301	14,711			
			Mio US\$ 2018	74,063	13,737	19.0%	n.a.	n.a.	n.a.			
			Mio US\$ 2017	72,863	12,890	18.0%	n.a.	n.a.	n.a.			
			Mio Euro/€ 2019	59,316	12,508	21.0%	11,466	8,389	13,142			
			Mio Euro/€ 2018	62,675	11,625	19.0%	13,270	9,129	11,199			
			Mio Euro/€ 2017	64,475	11,406	18.0%	n.a.	n.a.	n.a.			
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 117,628 2018: 122,404		59,316 Mio €	100.0%	Board of Executive Directors: Martin Brudermueller, Chairman; Hans-Ulrich Engel, Vice Chairman; Saori Dubourg, Sanjeev Gandhi, Michael Heinz, Markus Kamieth, Wayne T. Smith						
	Automotive:		n.a.	12,508 Mio €	21.0%	Annual Report: http://report.basf.com/2019 Press Releases: https://www.basf.com/global/en/media/news-releases.html Global automotive website: https://automotive.basf.com/						
	Americas:		n.a.	n.a.	n.a.							
	NAFTA/North America:		19,355	16,015 Mio €	27.0%							
	South America:		7,485*	5,338 Mio €	9.0%							
	Asia-Pacific:		18,634	14,236 Mio €	24.0%							
	Europe:		72,153	23,726 Mio €	40.0%							
	Germany:		54,028	n.a.	n.a.							
	Further Information											
	Company profile:	The automotive industry is one of BASF's key customer industries. In 2019, BASF's automotive driven sales totaled €12.5 billion – representing approximately 21% of BASF Group's sales. BASF supplies and develops functional materials and solutions that enable vehicles to be built more efficiently and have a lower environmental impact, whatever powertrain technology they use. BASF's product range includes for example plastics, coatings, catalysts, automotive fluids as well as battery materials. With such an extensive range of products, BASF is the world's leading chemical supplier to the automotive industry. BASF cooperates closely with customers all over the world through a network embracing Europe, Asia-Pacific, North and South America as well as Africa. Further information on BASF's solutions for the automotive industry is available at automotive.basf.com .										
	Revenue split:	n.a.										
	Sites (production/R&D):	n.a.										
	R&D facts:	n.a.										
	Main automotive Customers:	n.a.										
	Main automotive products:	Functional materials and solutions - for example plastics, coatings, catalysts, automotive fluids as well as battery materials.										
	Sources:	Annual Reports. Further information on BASF's solutions for the automotive industry is available on the internet at www.automotive.basf.com										
	Annotations:	* incl. Africa and Middle East										



Rank	Company	Currencies	Total Sales	Automotive Sales*	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
			in figures only:	in figures:	in % of Total Sales:	Automotive*	Connected Solutions	Appliances	Div. Solutions	Others	Eliminations	
23 ▲ (31)	 Panasonic Corporation 1006, Oaza Kadoma, Kadoma-shi Osaka 571-8501 Japan www.panasonic.net FY ended: March, 31											
			Mio US\$ 2019/20	68,711	13,598	19.8%	13,598	9,500	23,784	29,308	2,710	10,188
			Mio US\$ 2018/19	72,481	14,283	19.7%	27,018	10,214	24,912	18,441	2,802	10,907
			Mio US\$ 2017/18	71,209	13,588	19.1%	25,014	9,906	24,838	17,462	2,841	-8,851
			Mio Yen/¥2019/20	7,490,601	1,482,400	19.8%	1,482,400	1,037,700	2,592,800	3,195,000	295,400	1,110,700
			Mio Yen/¥2018/19	8,002,733	1,557,000	19.7%	2,983,100	1,227,700	2,750,600	2,036,100	309,500	1,204,300
			Mio Yen/¥2017/18	7,982,200	1,523,200	19.1%	2,803,500	1,110,400	2,784,200	1,957,400	318,500	-992,200
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2020: 259,385 2019: 271,869		7,490,601 Mio ¥	100.0%	CEO of Automotive Company: Yuki Kusumi Senior Vice President: Kenji Tamura Vice Presidents: Masashi Nagayasu, Tatsuo Ogawa Managing Officers: Kazuyo Sumida, Masao Hinoguchi, Naohiro Kato, Ayako Shotoku, Masashige Mizuyama, Motoshi Hisada						
	Automotive:		n.a.	1,482,400 Mio ¥	19.8%	Annual Reports: https://www.panasonic.com/global/corporate/ir.html Press Releases: https://news.panasonic.com/global/						
	Americas:		n.a.	1,442,300 Mio ¥	19.3%							
	NAFTA/North America:		n.a.	n.a.	n.a.							
	South America:		n.a.	n.a.	n.a.							
	Asia-Pacific:		n.a.	5,327,700 Mio ¥	71.1%							
	therefrom Japan:		n.a.	3,609,100 Mio ¥	48.2%							
	therefrom China:		n.a.	754,800 Mio ¥	10.1%							
	Europe:		n.a.	720,600 Mio ¥	9.6%							
	Further Information											
	Company profile:	Panasonic Corporation was launched in 1918 and is one of the largest electronic product manufacturers in the world.										
	Revenue split:	The Panasonic Group is divided into Divisional Companies for business management, and they support the autonomy of each business division and execute businesses in their respective areas on a global scale. The results of their performance are classified and disclosed in the five reportable segments of „Appliances“, „Life Solutions“, „Connected Solutions“, „Automotive“ and „Industrial Solutions“. Each company has its distinct R&D, production, and sales functions. The Company's consolidated group sales for fiscal 2020 decreased by 6% to 7,490.6 billion yen from a year ago. Sales of Automotive decreased by 3% to 1,482.4 billion yen from a year ago. On April 1, 2019, „Automotive & Industrial Systems“ was reorganized to „Automotive“ and „Industrial Solutions“. „Eco Solutions“ was renamed as „Life Solutions.“ In addition, certain businesses were transferred among segments. Accordingly, the figures of segment information in fiscal 2019 have been reclassified to conform to the presentation for fiscal 2020.										
	Sites (production/R&D):	There are currently 529 consolidated companies worldwide.										
	R&D facts:	R&D expenditures ¥475,005 Mio in FY 2019/20, ¥488,757 Mio in FY 2018/2019, ¥448,900 Mio in FY 2017/2018, ¥436.130 Mio in FY 2016/2017 and ¥438.851 Mio in FY 2015/2016.										
	Main automotive Customers:	Major automotive manufacturers around the world.										
	Main automotive products:	The Automotive Company's business field includes in-vehicle infotainment, in-vehicle electronics, automotive mirrors and motorized systems such as automotive batteries. Main products are the development, manufacture and sale of electronic components, Next-generation cockpit systems, Navigation systems, ETC onboard units, Camera modules, On-board charging systems and Inverter-integrated compressors.										
	Main automotive competitors:	E. g. Bosch (Blaupunkt), Siemens VDO (Dayton), Delphi (Grundig), Alps (Alpine), Becker, Pioneer, Bose; others e.g. Electrolux, Philips Electronics, Sony, Aiwa										
	Sources:	Company Information										
	Annotations:	* Former „Automotive and Industrial Solutions“ have been reclassified										



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates								
			in figures only:	in figures:	in % of Total Sales:	Engine Systems and Components	Filtration and Engine Peripherals	Thermal Management	Aftermarket	Mechatronics Division	Profit Centers		
24	 Mahle GmbH Pragstrasse 26 - 46 Stuttgart Baden-Württemberg Germany www.mahle.com FY ended: Dec, 31												
(17)			Mio US\$ 2019	13,488	13,488	100.0%	2,929	2,342	5,100	1,063	551	1,502	
			Mio US\$ 2018	14,867	14,867	100.0%	3,286	2,666	5,470	1,097	535	1,813	
			Mio US\$ 2017	14,452	14,452	100.0%	3,163	2,538	5,064	1,080	460	2,147	
			Mio Euro/€ 2019	12,049	12,049	100.0%	2,617	2,092	4,556	950	492	1,342	
			Mio Euro/€ 2018	12,581	12,581	100.0%	2,781	2,256	4,629	928	453	1,534	
			Mio Euro/€ 2017	12,788	12,788	100.0%	2,799	2,246	4,481	956	407	1,900	
			Global Footprint	Employees	Regional Sales		Board						
			Total:	2019: 77,000 2018: 79,500	12,049 Mio €	100.0%	Dr. Jörg Stratmann: Chairman and CEO; Georg Dietz: Engine Systems and Components business unit Bernd Eckl: Industrial Thermal Management, Compressors, and Control Units profit centers; Wilhelm Emperhoff: (since January 1, 2020) Electronics and Mechatronics business unit, Corporate Purchasing; Bernd Eckl: Thermal Management business unit - Industrial Thermal Management, Compressors, and Control Units profit centers; Michael Frick: Finance; Martin Weidlich: (since January 1, 2020) Filtration and Engine Peripherals business unit, Corporate MAHLE Production System; Anke Felder: (since January 1, 2020) Human Resources Annual Report: https://www.mahle.com/en/investor-relations/financial-reports/ Press releases: https://www.mahle.com/en/news-and-press/						
			Automotive:		n.a.	12,049 Mio €	100.0%						
	Americas:		24,527	4,021 Mio €	33.0%								
	North America:*		16,136	3,391 Mio €	28.0%								
	South America:		8,391	630 Mio €	5.0%								
	Asia-Pacific:		16,161	2,404 Mio €	20.0%								
	Africa:		991	55 Mio €	1.0%								
	Europe:		35,336	5,569 Mio €	46.0%								
	Germany:		n.a.	n.a.	n.a.								
Further Information													
	Company profile:	The MAHLE Group is a leading global development partner to the automotive industry and offers its customers complete systems from a product range that is unrivaled in breadth and depth. Our new developments are geared toward the further optimization of combustion engines and thermal management solutions as well as the expansion of e-mobility. We also want to set new future standards with our innovative solutions by consistently using and expanding our knowledge and innovative strength.											
	Revenue split:	see above											
	Sites (production/R&D):	With 160 production locations and 16 major research and development centers, Mahle is represented on five continents and employ approximately 77,000 people overall.											
	R&D facts:	In the year under review, we maintained our group-wide research and development (R & D) activities at a high level, investing EUR 751 million in this area — following EUR 751 million of investment in the 2018 business year. As at the end of 2018, Mahle employed 6,167 R & D staff.											
	Main automotive Customers:	Almost all automobile and engine manufacturers worldwide.											
	Main automotive products:	Product portfolio consisting of engine systems and components, filtration, and thermal management addresses all the crucial issues relating to the powertrain and air conditioning technology. In addition, our expertise in electric and electronic components and systems enables us to offer integrated systems solutions for e-mobility.											
	Main automotive Competitors:	Major first-tier automotive manufacturers worldwide.											
	Sources:	Annual Report, Company Information											
	Annotations:	*Canada, Mexico, USA											



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates*								
			in figures only:	in figures:	in % of Total Sales:								
25	 Toyota Boshoku Corporation 1-1 Toyoda-cho Kariya-shi, Aichi-ken, 448-8651 Japan www.toyota-boshoku.co.jp/en FY ended: March, 31												
(24)			Mio US\$ 2019/20	12,591	12,591	100.0%							
			Mio US\$ 2018/19	12,747	12,747	100.0%							
			Mio US\$ 2017/18	12,485	12,485	100.0%							
			Mio Yen/¥ 2019/20	1,372,616	1,372,616	100.0%							
			Mio Yen/¥ 2018/19	1,407,392	1,407,392	100.0%							
			Mio Yen/¥ 2017/18	1,399,530	1,399,530	100.0%							
			Global Footprint	Employees	Regional Sales		Board						
			Total:	2019: n.a. 2018: 43,103	1,372,616 Mio ¥	100.0%	Shuhei Toyoda: Chairman; Takeshi Numa: President; Yoshihiro Ito: Executive Vice President; Shinji Kano: Executive Vice President Takashi Yamamoto: Executive Vice President Contact: https://www.toyota-boshoku.com/global/inquiry/ Annual Reports: https://www.toyota-boshoku.com/global/ir/ Press Releases: https://www.toyota-boshoku.com/global/news/release/						
			Automotive:		n.a.	1,372,616 Mio ¥	100.0%						
	Americas:		n.a.	268,736 Mio ¥	19.6%								
	NAFTA/North America:		n.a.	n.a.	n.a.								
	South America:		n.a.	n.a.	n.a.								
	Asia-Pacific:		n.a.	308,686 Mio ¥	22.5%								
	Japan:		n.a.	708,218 Mio ¥	55.6%								
	Europe:*		n.a.	86,974 Mio ¥	6.3%								
	Germany:		n.a.	n.a.	n.a.								
Further Information													
	Company profile:	Company profile: Toyota Boshoku aims to be one of the world's leading suppliers of automotive interior systems. Business operations: Development of automotive interior systems; manufacture and sale of automotive interior products; manufacture and sale of automotive filters and powertrain components; manufacture and sale of other automotive components; production and sale of fabric goods.											
	Revenue split:	see above											
	Sites (production/R&D):	The Toyota Boshoku group operates in 106 companies based around the world. These group companies are divided into four regions (North&South America, Asia&Oceania, Europe&Africa and Japan).											
	R&D facts:	n.a.											
	Main automotive Customers:	Especially Toyota Group, other OEMs as GM.											
	Main automotive products:	Development of automotive interior systems; manufacture and sales of automotive interior products (fabrics for seats, for components as airbags, seatbelts etc., seats, door trims, headliners, carpets, and other interior products); manufacture and sales of automotive filters and power train components (as plastic intake manifolds, cylinder head covers, air-induction system products, replaceable element oil filters, and high-performance Pollen Reducing Cabin Air Filters); manufacture and sales of other automotive components (plastics moldings of bumpers, fender liners); production and sales of fabric goods, uniforms for workers etc.											
	Main automotive competitors:	Delphi, Faurecia, Intier Automotive (Magna), Johnson Controls, Lear, Tachi-S, Toyoda Gosei and Visteon, IAC, Mann + Hummel etc.											
	Sources:	Annual Report, Company Information											
	Annotations:	* incl. Africa											



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates				
			in figures only:	in figures:	in % of Total Sales:	Automotive	Industrial			
26 ▼ (23)	 Schaeffler AG Industriestraße 1-3 91074 Herzogenaurach Bavaria Germany www.schaefflergroup.com FY ended: Dec, 31									
			Mio US\$ 2019	16,150	12,151	75.5%	12,151	4,442		
			Mio US\$ 2018	16,829	12,829	76.2%	12,829	3,968		
			Mio US\$ 2017	15,845	12,283	77.5%	12,283	3,562		
			Mio Euro/€ 2019	14,427	10,885	75.5%	10,885	3,541		
			Mio Euro/€ 2018	14,241	10,856	76.2%	10,856	3,358		
			Mio Euro/€ 2017	14,021	10,869	77.5%	10,869	3,152		
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2019: 87,748 2018: 92,478		14,427 Mio €	100.0%	Klaus Rosenfeld: Chief Executive Officer; Uwe Wagner: Chief Technology Officer; Matthias Zink: CEO Automotive; Andreas Schick: Chief Operating Officer; Corinna Schittenhelm: Chief Human Resources Officer; Dr. Stefan Spindler: CEO Industrial; Michael Söding: Automotive Aftermarket				
	Automotive:		n.a.	10,855 Mio €	75.5%					
	Americas:		12,285	3,160 Mio €	21.9%					
	NAFTA/North America:		n.a.	n.a.	n.a.					
	South America:		n.a.	n.a.	n.a.					
	Asia-Pacific:		3,160	1,500 Mio €	10.4%					
	Greater China:		12,200	2,770 Mio €	19.2%					
	Europe:		63,195	6,997 Mio €	48.5%					
	Germany		n.a.	n.a.	n.a.	Contact: https://www.schaeffler.com/content.schaeffler.com/en/meta/contact/contact.jsp Annual Reports: https://www.schaeffler-annual-report.com/site.annualreport/en/index.jsp Press Releases: https://www.schaeffler.de/content.schaeffler.de/de/news_medien/presse/index.jsp				
	Further Information									
	Company profile:	The Schaeffler Group is a global automotive and industrial supplier. By delivering high-precision components and systems in engine, transmission, and chassis applications, as well as rolling and plain bearing solutions for a large number of industrial applications, the Schaeffler Group is already shaping "Mobility for tomorrow" to a significant degree. The technology company generated sales of approximately EUR 14.2 billion in 2019. With around 87,750 employees, Schaeffler is one of the world's largest family companies and, with approximately 170 locations in over 50 countries, has a worldwide network of manufacturing locations, research and development facilities, and sales companies.								
	Revenue split:	see above								
	Sites (production/R&D):	The Schaeffler Group currently has a global production system consisting of 73 plants in 22 countries with approximately 170 locations worldwide, 20 research and development centers.								
	R&D facts:	Research and development expenses increased to EUR 849 Mio € in 2019 which represents an R&D ratio of 5.9% of revenue.								
	Main automotive Customers:	The Schaeffler Group is partner for nearly all automotive manufacturers and important suppliers.								
	Main automotive products:	Engine systems: Rolling bearing solutions, products for belt and chain drives, valve train components, and systems for variable valve trains; Transmission systems: Transmission systems: Torsion and vibration dampers, clutches and double clutch systems, torque converters, CVT components, lightweight differentials, bearing solutions, synchronizing and gearshift components; Chassis systems: Wheel bearings, bearing solutions, steering components, electromechanical actuators for roll stabilizers and power-assisted steering systems; Hybrid and electrical drive systems: Hybrid modules, electrical axle drives, electrical wheel hub drives.								
	Main automotive competitors:	n.a.								
	Sources:	Annual Report, Homepage								



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Components Technology	Elevator Technology	Industrial Solutions	Materials Services	Steel Europe	
27 ▼ (20)	 thyssenkrupp AG thyssenkrupp Allee 1 45143 Essen North-Rhine-Westphalia Germany www.thyssenkrupp.com FY ended: Sept, 30										
			Mio US\$ 2019	46,952	11,738	25.0%	7,831	9,147	4,181	15,524	9,788
			Mio US\$ 2018	50,512	14,144	28.0%	9,306	8,972	5,923	17,314	11,191
			Mio US\$ 2017	46,839	12,646	27.0%	8,556	8,672	6,240	15,443	10,075
			Mio Euro/€ 2019	41,944	10,486	25.0%	6,996	8,171	3,735	13,868	8,744
			Mio Euro/€ 2018	42,745	11,969	28.0%	7,875	7,554	5,020	14,652	9,470
			Mio Euro/€ 2017	41,447	11,190	27.0%	7,571	7,674	5,522	13,665	8,915
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 162,372 2018: 161,096		41,944 Mio €	100.0%	Martina Merz: Chairman of the Executive Board; Klaus Keysberg: Chief Financial Officer; Oliver Burkhard: Chief Human Resources; Karsten Kroos: Chairman of the Management Board of Business Area Components Technology;					
	Automotive:		n.a.	10,486 Mio €	25.0%						
	Americas:		33,089	9,943 Mio €	23.7%						
	NAFTA/North America:		24,389	8,848 Mio €	21.0%						
	South America:		9,700	1,095 Mio €	2.6%						
	Asia-Pacific:		4,583	2,258 Mio €	5.4%						
	Greater China:		17,459	3,166 Mio €	7.5%						
	Europe:		94,566	23,435 Mio €	55.9%						
	Germany:		63,271	n.a.	n.a.	Contact: https://www.thyssenkrupp.com/en/ ; Annual Report: https://www.thyssenkrupp.com/de/investoren/berichterstattung-und-publikationen/ ; Press Releases: https://www.thyssenkrupp.com/en/newsroom/press-releases					
	Further Information										
	Company profile:	thyssenkrupp is a technology group with traditional strengths in materials. Over 162,000 employees in 78 countries work with passion and technological know-how to develop high-quality products and intelligent industrial processes and services for sustainable progress. Their skills and commitment are the basis of our success. In fiscal year 2018/2019 thyssenkrupp generated sales of €41.9 billion. Together with our customers we develop competitive solutions for future challenges in their respective industries. With our engineering expertise we enable our customers to gain an edge in the global market and manufacture innovative products in a cost- and resource-friendly way. Our technologies and innovations are the key to meeting diverse customer and market requirements around the world, growing on the markets of the future, and generating strong and stable earnings, cash flows and value growth.									
	Revenue split:	See annual report, split by customer and region.									
	Sites (production/R&D):	n.a.									
	R&D facts:	Total spending on R&D at the thyssenkrupp Group came to €761 million in the reporting year; Our global R&D network includes some 4,800 employees at around 90 sites									
	Main automotive Customers:	Virtually every leading car and truck manufacturer.									
	Main automotive products:	See homepage: https://www.thyssenkrupp.com/en/products/automotive/									
	Main automotive competitors:	n.a.									
	Sources:	Annual Report, Company Information									



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures*:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
28 ▼ (25)	 Cummins Inc. 500 Jackson Street Columbus Indiana IN 47201 USA www.cummins.com FY ended: Dec, 31		Mio US\$ 2019	23,571	10,640	45.1%	10,056	4,460	6,914	8,071	38
			Mio US\$ 2018	23,771	11,847	49.8%	10,566	4,626	7,166	7,828	7
			Mio US\$ 2017	20,428	8,976	43.9%	8,953	4,058	5,889	7,058	n.a.
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 61,615 2018: 62,610	23,571 Mio US\$		100.0%	N. Thomas Linebarger: Chairman of the Board of Directors and CEO; Livingston L. Satterthwaite: President and COO; Sherry A. Aaholm: President CIO; Peter W. Anderson: Vice President Global Supply Chain and Manufacturing; Sharon R. Barner: Vice President General Counsel; Steven M. Chapman: Group Vice President China and Russia; Christopher C. Clulow: Vice President Corporate Controller; Jill E. Cook: Vice President Chief Human Resources Officer; Tracy A. Embree: Vice President and President Distribution Business; Norbert Nustere: Vice President and President Power Systems; Srikanth Padmanabhan: Vice President and President Engine Business; Jennifer Rumsey: Vice President and President Components Group;					
Automotive:		n.a.	10,640 Mio US\$		45.1%						
Americas:		n.a.	13,519 Mio US\$		57.4%						
NAFTA/North America:		n.a.	n.a.		n.a.						
South America:		n.a.	n.a.		n.a.						
China:		n.a.	2,331 Mio US\$		9.9%						
India:		n.a.	848 Mio US\$		3.6%						
Others:		n.a.	6,873 Mio US\$		29.2%						
Germany:		n.a.	n.a.		n.a.						
Further Information											
Company profile:		Cummins Inc. was founded in 1919 in Columbus, Indiana, as one of the first diesel engine manufacturers. It designs, manufactures, distributes and services diesel and natural gas engines and engine-related component products, including filtration, aftertreatment, turbochargers, fuel systems, controls systems, air handling systems and electric power generation systems. Headquarter is in Columbus, Indiana, (USA).									
Revenue split:		Cummins has five complementary operating segments: Engine, Distribution, Components, Power Systems and New Power. Engines 34%, Power Systems 15%, Components 24%, Distribution 27%. Cummins has long-term heavy-duty and mid-range engine supply agreements with PACCAR and with Navistar and Volvo Trucks North America as well as with Daimler Trucks North America, Ford and MAN. Cummins also has an agreement with Chrysler for supplying the engine for Dodge Ram trucks. It manufactures 105 to 385 horsepower diesel engines, including engines for the pickup truck market for Chrysler and Nissan in North America, and LCV markets in Europe, Latin America and Asia.									
R&D facts:		Research and development expenses, net of contract reimbursements, were \$998 million, \$894 million and \$734 million for the years ended December 31, 2019, 2018 and 2017, respectively. Overall, research, development and engineering expenses, as a percentage of sales, increased to 4.2 percent in 2019 from 3.8 percent in 2018.									
Sites (production/R&D):		Cummins serves its customers through a network of approximately 600 wholly-owned and independent distributor locations and over 7,600 dealer locations in more than 190 countries and territories.									
Main automotive products:		Heavy-duty engines for on- and off-highway applications; exclusive supplier of diesel engines for Dodge Ram pickups; power generating systems and standby generators for commercial and consumer use; engine filtration and aftertreatment products; industrial silencers; turbochargers.									
Main automotive competitors:		In the markets served by the Engine segment, Cummins competes with independent engine manufacturers as well as OEMs who manufacture engines for their own products. Primary competitors in North America are Detroit Diesel, Volvo Powertrain, International Truck and Engine (Engine Division) and Caterpillar Inc. (CAT). Other engine manufacturers in international markets include Volvo, Weichai Power Co. Ltd., MAN Nutzfahrzeuge, Fiat Power Systems, GE Jenbacher, Tognum AG, CAT, Volvo, Yanmar, GuangxiYuchai Group and Deutz Components: Donaldson Company, Inc., Clarcor Inc., Mann+Hummel Group, Honeywell International, Borg-Warner, Robert Bosch GmbH, Tenneco Inc., Eberspacher Holding GmbH & Co. KG and Denso Corporation.									
Sources:		Annual Report									
Annotations:		* Estimation (automotive-related sales mostly generated by engine and components units)									



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
29 ▶ (29)	 Plastic Omnium S.A. 1, rue du Parc 92593 Paris Levallois Cedex France www.plasticomnium.com/en FY ended: Dec, 31		Mio US\$ 2019	10,279	10,279	100.0%	4,615	3,084	2,570			
			Mio US\$ 2018	9,724	9,724	100.0%	n.a.	n.a.	n.a.			
			Mio US\$ 2017	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
			Mio Euro/€ 2019	9,183	9,183	100.0%	4,123	2,755	2,296			
			Mio Euro/€ 2018	8,244	8,244	100.0%	n.a.	n.a.	n.a.			
			Mio Euro/€ 2017	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
Global Footprint		Employees	Regional Sales		Board							
Total:		2019: 32,171 2018: 32,000	8,244 Mio €		100.0%	Laurent Favre: Director and CEO; Félicie Burrelle: Managing Director Contact: https://www.plasticomnium.com/en/contact-us.html Annual Reports: https://www.plasticomnium.com/en/finance/regulated-information.html Press Releases: https://www.plasticomnium.com/en/news.html						
Automotive:		n.a.	7,665 Mio €		100.0%							
Americas:		n.a.	2,805 Mio €		30.5%							
North America:		5,453	2,630 Mio €		28.6%							
South America:		**1,380	175 Mio €		1.9%							
Asia:		2,097	1,481 Mio €		16.1%							
Other Regions:		n.a.	n.a.		n.a.							
Europe excl. France:		10,094	*4,897 Mio €		53.3%							
France:		2,889	n.a.		n.a.							
Further Information												
Company profile:		The Company delivers innovative solutions tailored to meet the needs of community residents and road users. These include waste containerization products and services, signage and urban equipment as well as automotive body modules and fuel systems. In its core Automotive and Environment businesses, Plastic Omnium focuses on innovation that enhances individual and social well-being while protecting the natural environment. The Automotive Division combines the expert skills of Plastic Omnium Auto Exterior, a world leader in body components and modules, and Inergy Automotive Systems, the world's leading producer of fuel systems. Purchase of Faurecia Exterior Systems business in 2016 have been the biggest acquisition in Plastic Omnium's history.										
Revenue split:		see above										
Sites (production/R&D):		Plastic Omnium is a global player, operating 131 factories in 26 countries.										
R&D facts:		4.5% Revenue in research and development; 2,700 Engineers; 26 R&D Centers										
Main automotive Customers:		E.G. PSA, GM, VW, BMW, Ford, Renault/Nissan/Mitsubishi, Chrysler, Jaguar Land Rover, Audi										
Main automotive products:		Bumper Systems and fascias, body panels and spoilers, rear closure systems, semi structural and structural parts, trucks, front-end-modules. Auto Energy Division: Plastic fuel systems, diesel emission reduction.										
Main automotive competitors:		E.g. DuPont, Magna International, Faurecia, Peguform, Textron Kautex, TI Automotive, Toyoda Gosei, Visteon.										
Sources:		Annual Report, Company Information										
Annotations:		*Europe and Africa ** South America and Africa										



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	In % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
30 ▼ (27)	 BorgWarner Inc. 3850 Hamlin Road Auburn Hills Michigan (MI 48326) USA www.borgwarner.com FY ended: Dec, 31					Engine Group	Drivetrain Group				
			Mio US\$ 2019	10,168	10,168	100 %	6,214	4,015			
			Mio US\$ 2018	10,530	10,530	100 %	6,447	4,139			
			Mio US\$ 2017	9,799	9,799	100 %	6,062	3,790			
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 29,000 2018: 30,000	10,168 Mio US\$		100%	Frederic B. Lissalde: President and Chief Executive Officer; Thomas J. McGill: Vice President and Controller; Kevin A. Nowlan: Executive Vice President, CFO; Tonit M. Calaway: Executive Vice President, Chief Legal Officer and Secretary; Brady D. Ericson: Executive Vice President; Felecia Pryor: Executive Vice President, Chief Human Resources Officer					
Automotive:		29,000	10,168Mio US\$		100%						
Americas:		n.a.	n.a.		n.a.	Contact: www.borgwarner.com/contact; Investor Relations: www.borgwarner.com/investors; Press Releases: www.borgwarner.com/newsroom;					
NAFTA/North America:		n.a.	3,375 Mio US\$		33%						
Other:		n.a.	150 US\$		1%						
Asia-Pacific:		n.a.	2,833 Mio US\$		28%						
Europe:		n.a.	3,810 Mio US\$		37%						
Germany:		n.a.	n.a.		n.a.						
Further Information											
Company profile:		BorgWarner Inc. is a Delaware corporation incorporated in 1987 and a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles.									
Revenue split:		The Company reports its results under two reporting segments: Engine and Drivetrain. During the year ended December 31, 2019, approximately 83% of the Company's net sales were for light-vehicle applications; approximately 9% were for commercial vehicle applications; approximately 4% were for off-highway vehicle applications; and approximately 4% were to distributors of aftermarket replacement parts. The Engine segment's net sales for the year ended December 31, 2019 decreased \$125 million, or 3.0%. The Drivetrain segment's net sales for the year ended December 31, 2019 decreased \$233 million, or 3.6%.									
Sites (production/R&D):		As of December 31, 2019, the Company had 67 manufacturing, assembly, and technical locations worldwide.									
R&D facts:		Research and development costs was \$413 million in 2019, \$440.1 million in 2018, \$407.5 million in 2017 and \$343.2 in 2016. The Company has approximately 6,430 active domestic and foreign patents and patent applications pending or under preparation.									
Main automotive Customers:		Consolidated net sales to a single customer (including their subsidiaries), which exceeded 10% of total net sales, were to Ford with approximately 15% and Volkswagen with approximately 11%.									
Main automotive products:		Engine Group: engine timing systems, front wheel drive transmission chain and four-wheel drive chain, exhaust gas recirculation, thermal systems, turbochargers, glow plugs, advanced ignition technology for gasoline engines; Drivetrain Group: coupling systems, transfer cases, transmission products, automatic transmission components, dual clutch modules, friction clutch modules, friction and steel plates, transmission bands, torque converter clutches, electric motors, on- and off-axis p2 modules, electric drive modules, integrated drive modules, power electronics etc.									
Main automotive competitors:		Engine: Cummins Turbo Technology, Honeywell, Bosch Mahle Turbo Systems, IHI, Mitsubishi Heavy Industries (MHI), Continental, Mahle, Denso, Bosch, Eldor, T.RAD, Pierburg, NGK, Eberspaecher, Iwis, Schaeffler Group, Tsubaki Group, Horton, USUI, Xuelong; Drivetrain: GKN Driveline, JTEKT, Magna Powertrain, Denso, Bosch, Valeo, Continental, Dynax, FCC, Schaeffler Group.									
Sources:		Annual Report, Company Information									



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	In % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
31 ▼ (28)	 Gestamp Alfonso XII, Numero 16 28014 Madrid Spain www.gestamp.com FY ended: Dec, 31					Body-in-White & Chassis	Mechanism	Tooling and Others			
			Mio US\$ 2019	10,147	10,147	100.0%	8,340	1,165	666		
			Mio US\$ 2018	10,101	10,101	100.0%	8,085	1,202	814		
			Mio US\$ 2017	9,269	9,269	100.0%	7,277	1,148	843		
			Mio Euro/€ 2019	9,065	9,065	100.0%	7,450	1,020	595		
			Mio Euro/€ 2018	8,548	8,548	100.0%	6,842	1,017	689		
			Mio Euro/€ 2017	8,202	8,202	100.0%	6,439	1,016	746		
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 43,822 2018: 43,553	9,065 Mio €		100.0%	Francisco J. Riberas: Chairman & President; Francisco López: CEO; Carmen del Pablo: CFO; Manuel de la Flor: CHRO; Mario Eikermann: Managing Director BU Chassis; Torsten Greiner: Managing Director BU Mechanisms (Edscha);					
Automotive:		43,822	9,065 Mio €		100.0%						
Americas:		13,590	2,632 Mio €		29.0%	Annual Reports: https://www.gestamp.com/Investors-Shareholders/Economic-Financial-information/Annual-Information Press Releases: https://www.gestamp.com/Media					
NAFTA/North America:		7,831	1,976 Mio €		22.0%						
South America:		5,759	656 Mio €		7.0%						
Asia-Pacific:		5,120	1,143 Mio €		13.0%						
Other Regions:		126	0 Mio €		0%						
Europe:		24,986	5,290 Mio €		58.0%						
Germany:		4,373	987 Mio €		11.0%						
Further Information											
Company profile:		Gestamp is a world leader in the design, development and manufacturing of car components and metal assemblies for the main vehicles manufacturers. It is specialized in the development to render safer and lighter cars, therefore, better cars in terms of energy consumption and environmental impact. Since its foundation in 1997, Gestamp has developed from a Spanish built-to-print supplier to a global Automotive Tier Supplier in the main automotive hubs worldwide. As a full-service-supplier Gestamp accompanies its customers from the first idea until the serial production. Nowadays more than 40,000 employees work with Gestamp worldwide.									
Revenue split:		n.a.									
Sites (production/R&D):		More than 110 Production Plants and 13 R&D Centers in 23 countries worldwide									
R&D-facts:		For Gestamp Innovation is a mean of progress. That's why R&D takes a leading and important role in the company's strategy. Approx. 1500 employees are involved in the global R&D activities (13 R&D Centers worldwide). As a full-service-supplier and engineering partner of its clients Gestamp is involved at a first stage and also does Benchmark and Co-Development.									
Main automotive Customers:		Gestamp supplies products to the top 12 car manufacturers that produce over 80 % of the vehicles at world level.									
Main automotive products:		Gestamp provides a wide product portfolio mainly made out of steel and other key materials that are integrated into bodywork of vehicles and their structures. Gestamp's activities encompasses all parts of the manufacturing process, thus encovering the entire value chain in the areas of Body-in-White, Chassis and Mechanisms (Edscha).									
Main automotive competitors:		Benteler, Magna, Tower Automotive, Martinea International, Kirchhoff Automotive, Metalsa									
Sources:		Corporate Information, Website, Annual Report									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates									
32 ▲ (35)	 Ningo Joyson Electronics Corp. No.99 Qingyi Road, High-Tech Park Ningo China en.joyson.cn FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:	Automotive Safety System	Automotive Electronic System	Automotive Components and Assembly						
			Mio US\$ 2019	8,931	8,931	100.0%	n.a.	n.a.	n.a.					
			Mio US\$ 2018	8,428	8,428	100.0%	6,488	1,397	543					
			Mio US\$ 2017	3,938	3,938	100.0%	n.a.	n.a.	n.a.					
			Mio RMB 2019	61,699	61,699	100.0%	n.a.	n.a.	n.a.					
			Mio RMB 2018	55,698	55,698	100.0%	42,880	9,231	3,587					
			Mio RMB 2017	26,606	26,606	100.0%	n.a.	n.a.	n.a.					
	Global Footprint	Employees	Regional Sales		Board									
	Total:	2019: 50,000 2018: 50,000	61,699 Mio RMB	100.0%	Chairman of the Board, President: Jianfeng Wang; Vice Chairman of the Board: Xuesong Zhu; Chief Financial Officer: Junyu Li Executive Vice President, Director: Wei Chen Vice Presidents: Yuan Liu, Yuxin Tang Directors: Jinhong Fan, Yuda Liu Independent Directors: Yunzhu Wei, Dadong Zhao, Tian Zhu									
	Automotive:		50,000	61,699 Mio RMB	100.0%									
	Americas:		n.a.	n.a.	n.a.									
	NAFTA/North America:		n.a.	n.a.	n.a.									
	South America and Canada:		n.a.	n.a.	n.a.									
	Asia-Pacific:		n.a.	n.a.	n.a.									
	Japan:		n.a.	n.a.	n.a.									
	Europe:		n.a.	n.a.	n.a.									
	Germany:		n.a.	n.a.	n.a.	Annual Report: http://en.joyson.cn/index.php?a=lists&catid=96 Press Releases: http://en.joyson.cn/index.php?a=lists&catid=136#								
	Further Information													
	Company profile:	Ningbo Joyson Electronic Corp. is committed to the research, develop and manufacture of intelligent automotive electronics, new energy automotive electronics, and high-end auto components. Founded in 2004, Joyson Electronics's main products used to be automotive functional components. Since 2011, the company has acquired several companies: Automotive electronics company PREH GmbH, Robotic companies IMA and QUIN GmbH in Germany, a global automotive safety system from United States, KSS, German smart car connect industry leader TS GmbH and Takata, a Japanese automotive safety parts maker. In 2018, company overcame numerous obstacles and completed the acquisition of highquality assets from Takata in April.												
	Revenue split:	Ningbo Joyson Electronic and its subsidiaries are mainly engaged in the R&D, production and sales of automotive components. JSS's airbags, seat belts, steering wheels and electronic systems account for 43%, 28%, 21% and 8% of its total revenue respectively, with a market share approximately 30% in the global automotive safety product sector.												
	Sites (production/R&D):	A total of more than 100 bases in 30 countries, over 50,000 employees globally.												
	R&D facts:	There are three major R&D centers located in China, the United States and Germany separately, with the total number of engineering technology and R&D staff exceeding 4,444. The company holds more than 1,500 patents worldwide. 2019 R&D expenditures in total were RMB 2.346 billion, 2018: RMB 2.691 billion, 2017: RMB 1.032 billion.												
	Main automotive Customers:	BMW, Audi, Mercedes, Volkswagen, GM, Ford, Skoda, Peugeot, Hyundai, Maxus, DAF, Seat, Opel, Rolls-Royce.												
	Main automotive products:	Auto Electronics: Driver Controls, Car Connect, Climate Control, Electronic control units, Sensor Systems; Auto Safety Products: Active Safety, Passive Safety, Specialty Products; E-Mobility; Auto Component: Air Intake Systems, Washer System, Air Management System, Mirror System, Front Griller, Fuel Tank Door, Steering Wheel												
	Main automotive competitors:	n.a.												
	Sources:	Company Information												
	Annotations:													



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates									
33 ▼ (32)	 JTEKT Corporation Osaka head office 3-5-8 Minami-semba, Chuo-ku, Osaka 542-8502 Japan www.jtekt.co.jp FY ended: March, 31		in figures only:	in figures:	In % of Total Sales:	Steering Systems, Driveline Components, Bearing	Machine Tools & Mechatronics							
			Mio US\$ 2019/20	13,013	8,458	65.0%	11,536	1,477						
			Mio US\$ 2018/19	13,744	8,953	65.0%	12,189	1,585						
			Mio US\$ 2017/18	12,856	8,356	65.0%	11,414	1,441						
			Mio Yen/¥ 2019/20	1,418,570	922,070	65.0%	1,257,570	161,000						
			Mio Yen/¥ 2018/19	1,520,800	988,520	65.0%	1,345,800	175,000						
			Mio Yen/¥ 2017/18	1,441,100	936,715	65.0%	1,279,500	161,500						
	Global Footprint	Employees	Regional Sales		Board									
	Total:	2019: 49,693 2018: 49,589	1,418,570 Mio ¥	100.0%	President: Tetsuo Agata; Executive Vice President: Hiroyuki Kaijima; Senior Executive Director: Katsumi Yamamoto; Executive Directors: Takumi Matsumoto, Makoto Sano, Shinji Kato, Hirofumi Matsuoka, Kazuhisa Makino; Directors: Takao Miyatani, Iwao Okamoto, Takeshi Uchiyamada									
	Automotive:		n.a.	922,070 Mio ¥	65.0%									
	Americas:		n.a.	197,000 Mio ¥	13.9%									
	NAFTA/North America:		n.a.	197,000 Mio ¥	13.9%									
	South America:		n.a.	n.a.	n.a.									
	Asia-Oceania:		n.a.	928,000 Mio ¥	65.4%									
	Japan:		n.a.	605,000 Mio ¥	42.6%									
	Europe:		n.a.	293,000 Mio ¥	20.7%									
	Germany:		n.a.	n.a.	n.a.	Contact: https://www.jtekt.co.jp/e/support/contact.html Annual Report: https://www.jtekt.co.jp/e/ir/settlement.html Press Releases: https://www.jtekt.co.jp/e/news/news_release.html Suppliers: http://www.jtekt.co.jp/e/company/supply.html								
	Further Information													
	Company profile:	JTEKT Corporation is a leading Japanese manufacturer of steering systems, driveline components, bearings and machine tools. The Company's bearings solutions are used in a wide variety of applications, including automobiles, jet engines, windmill power generators, and shinkansen (bullet trains). JTEKT was formed in January 2006 following the merger of Toyoda Machine Works Ltd. and Koyo Seiko Co. Ltd. Koyo Seiko was founded in 1921, and Toyoda Machine Works in 1941. Headquartered in Nagoya and Osaka, JTEKT manufactures and sales steering systems, driveline components, bearings, machine tools, electronic control devices, home accessory equipment, etc.												
	Revenue split:	Sales by operations 2019/20: Driveline business 160 billion yen; Machine Tools & Mechatronic business 161 billion yen; Steering systems 716 billion yen; Bearings 380 billion yen.												
	Sites (production/R&D):	JTEKT has approx. 49,500 employees and operations in about 90 locations worldwide, encompassing Asia/Oceania, North America and Europe.												
	R&D facts:	R&D costs in 2019/20 were 66.0 billion yen; R&D costs in 2018/19 were 63.6 billion yen.												
	Main automotive Customers:	Major OEMs and suppliers as e.g. customers of German branch: Agco (Fendt), BMW, Bosch, Daimler, Dolmar, Enercon, Flender, GM-Opel, Hanomag, Komatsu, John Deere, Kordel, Linde, Man, Nordex, O & K, Papst Motoren, Ruville, SMS-Demag, VW, ZF Group, Raba (Hu), Turk Traktor (Tr), Vestas (Dk).												
	Main automotive products:	Manufacture and sale of steering systems, driveline components, bearings, machine tools, electronic control devices, home accessory equipment, etc.												
	Main automotive competitors:	Minebea, NSK, NTN, RBS Global, Schaeffler Group (INA/FAG), SKF, Timken, Nippon Bearing.												
	Sources:	Annual Report, Company Information												
	Annotations:	*Automotive Sales estimated from Driveline business, Steering systems and part of Bearings.												



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates	
34 ▼ (30)	 Yanfeng Global Automotive Interior Systems Co., Ltd. 399 Liuzhou Road, Shanghai, China www.yfai.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:	
			Mio US\$ 2019	8,800	8,800	100.0%
			Mio US\$ 2018	9,000	9,000	100.0%
			Mio US\$ 2017	8,800	8,800	100.0%
Global Footprint		Employees	Regional Sales		Board	
Total:		2019: 33,000 2018: 33,000	8,800 Mio US\$	100.0%	Steve Meszaros: CEO; Yuan Xinhua: COO; Su Yiru: CCO; Michael Kleinheksel: CFO;	
Automotive:		33,000	8,800 Mio US\$	100.0%	Contact: https://www.yfai.com/en/contact-us Press Releases: https://www.yfai.com/en/media-center Supplier: https://www.yfai.com/en/suppliers	
Americas:		12,000	n.a.	n.a.		
NAFTA/North America:		n.a.	n.a.	n.a.		
South America:		n.a.	n.a.	n.a.		
Asia-Pacific:		13,000	n.a.	n.a.		
Japan:		n.a.	n.a.	n.a.		
Europe & South Africa:		8,000	n.a.	n.a.		
Germany:		2,000	n.a.	n.a.		
Further Information						
Company profile:		Yanfeng Automotive Interiors (YFAI) is the global leader in automotive interiors. YFAI is redefining how people relax, work and play in their vehicle interiors today and decades from now. Headquartered in Shanghai, the company has approximately 110 manufacturing plants and technical centers in 20 countries and more than 33,000 employees globally. They design, develop and manufacture interior components for all automakers. Established in 2015, Yanfeng Automotive Interiors is a joint venture between Yanfeng, one of the largest automotive suppliers in China and Adient, the global leader in automotive seating. For more information, please visit www.YFAI.com .				
Revenue split:		n.a.				
Sites (production/R&D):		115 locations (technical centers and manufacturing plants).				
R&D facts:		6 Technical Centers, over 2000 employees.				
Main automotive Customers:		BMW, BYD, Daimler, Dodge, Dongfeng, FAW, Fiat, Ford, Great Wall, Honda, Hyundai, Kia, Mitsubishi, Nissan, Nio, GM, Opel, Peugeot, Toyota, Volvo, VW, New Mobility Players (West-coast US).				
Main automotive products:		Instrument Panels and Cockpits, Door Panels, Floor Consoles, Overhead Consoles, Decorative Trim and Lighting as well as Smart Interior Surfaces.				
Main automotive competitors:		Faurecia, IAC, Dräxlmaier, Grupo Antolin, Grammer				
Sources:		Company Information				
Annotations:						



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates	
35 ▲ (37)	 Dana Incorporated 3939 Technology Drive Maumee OH 43537 USA www.dana.com FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	
			Mio US\$ 2019	8,620	8,620	100.0%
			Mio US\$ 2018	8,143	8,143	100.0%
			Mio US\$ 2017	7,209	7,209	100.0%
Global Footprint		Employees	Regional Sales		Board	
Total:		2019: 36,300 2018: 30,900	8,620 Mio US\$	100.0%	James K. Kamsickas: President: chief executive officer (CEO), and a director of Dana Incorporated; Aziz Aghili: Executive vice president of Dana and president of Off-Highway Drive and Motion Technologies; Carl Beckwith: Senior vice president, global operations; Shelley Bridarolli: Senior vice president of human resources; Jonathan Collins: Executive vice president and chief financial officer; Christophe Dominiak: Senior vice president and chief technology officer;	
Automotive:		36,300	8,620 Mio US\$	100.0%	Annual Reports: https://danaincorporated.gcs-web.com/sec-filings Press Releases: https://www.dana.com/newsroom/ Suppliers: https://dana.com/suppliers/	
Americas:		n.a.	4,982 Mio US\$	57.8%		
NAFTA/North America:		n.a.	4,473 Mio US\$	51.9%		
South America:		n.a.	509 Mio US\$	5.9%		
Asia-Pacific:		n.a.	1,032 Mio US\$	12.0%		
Japan:		n.a.	n.a.	n.a.		
Europe:		n.a.	2,606 Mio US\$	30.2%		
Germany:		n.a.	478 Mio US\$	5.5%		
Further Information						
Company profile:		Dana Holding Corporation is headquartered in Maumee, Ohio and was incorporated in Delaware in 2007. As a global provider of high technology driveline (axles, driveshafts and transmissions), sealing and thermal-management products their customer base includes virtually every major vehicle manufacturer in the global light vehicle, medium/heavy vehicle and off-highway markets.				
Revenue split:		Light Vehicle Driveline Technologies (41.9%), Commercial Vehicle Driveline Technologies (18.7%), Off-Highway Driveline Technologies (27.4%) and Power Technologies (12.0%). Sites (production/R&D): Dana operates in 34 countries and had 149 major facilities around the world.				
Sites (production/R&D):		Dana operates in 33 countries and has 135 major facilities around the world.				
R&D facts:		At December 31, 2019, Dana had seven stand-alone technical and engineering centers and nineteen additional sites at which they conduct research and development activities. Research and development costs were \$112 in 2019, \$103 in 2018 and \$102 in 2017. Total engineering expenses including research and development were \$271 in 2019, \$252 in 2018 and \$220 in 2017.				
Main Customers:		Ford Motor Company (Ford) and Fiat Chrysler Automobiles (FCA) were the only individual customers accounting for 10% or more of our consolidated sales in 2019. As a percentage of total sales from operations, our sales to Ford were approximately 20% in 2019, 20% in 2018 and 22% in 2017, and our sales to FCA (via a directed supply relationship), the second largest customer, were approximately 11% in 2019, 11% in 2018 and 9% in 2017. PACCAR Inc, Toyota Motor Company and Volkswagen AG were our third, fourth and fifth largest customers in 2019. Danas 10 largest customers collectively accounted for approximately 55% of our sales in 2019.				
Main automotive products:		Axles – Front and rear axles, differentials, torque couplings, and modular assemblies. Driveshafts – Cardan universal joints, flexible couplings, center bearings, end fittings, and driveshafts. TireManagement Products – Central tire inflation, tire pressure control, and tire pressure monitoring products. Transmissions – Transfer cases, hydrostatic and powershift transmissions, torque converters, and electronic controls for off-highway vehicles. Sealing Products – Cylinder-head gaskets and covermodules, thermal-acoustical protective shielding, valve stem seals, and fuel-cell components. Thermal Products – Heat-exchange and thermal-bypass technologies for engine, transmission, and fluid applications and fuel-cell components.				
Main automotive competitors:		Light vehicle market: ZF Friedrichshafen AG, GKN plc, American Axle&Manufacturing Holdings, Inc., Magna International Inc., Wanxiang Group Corporation, Hitachi Automotive Systems LTD., IFA Group, GETRAG and the captive and vertically integrated operations of various truck and auto manufacturers (e.g., Chrysler and Ford). Power Technologies competitors include ElringKlinger, Federal-Mogul, Freudenberg NOK Group, Behr. KG, Mahle, Modine, Valeo, YinLun Co., LTD and Denso. Medium/heavy vehicle market: Principal Commercial Vehicle competitors include ArvinMeritor, American Axle, Hendrickson (a subsidiary of the Boler Group), Klein Products Inc. and OEMs' vertically integrated operations. Power Technologies' competitors in this market are the same as in the light vehicle market.				
Sources:		Annual Report				



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
36	 Autoliv Inc. Vasagatan 11, 7th floor P.O. Box 70381 10724 Stockholm Sweden www.autoliv.com FY ended: Dec, 31					Airbag Products	Seatbelt Products					
(34)			Mio US\$ 2019	8,548	8,548	100.0%	5,676	2,872				
			Mio US\$ 2018*	8,678	8,678	100.0%	5,698	2,980				
			Mio US\$ 2017	10,383	10,383	100.0%	5,342	2,794				
Global Footprint		Employees	Regional Sales		Board							
Total:		2019: 65,000 2018: 66,800	8,548 Mio US\$		100.0%							
Automotive:		n.a.	8,548 Mio US\$		100.0%							
Americas:		n.a.	2,907 Mio US\$		34.0%							
NAFTA/North America:		n.a.	n.a.		n.a.							
South America:		n.a.	n.a.		n.a.							
China:		n.a.	1,525 Mio US\$		18.0%							
Asia-Pacific:		n.a.	3,177 Mio US\$		37.0%							
Japan:		n.a.	n.a.		n.a.							
Europe:		n.a.	2,464 Mio US\$		29.0%							
Further Information												
Company profile:		On June 29, 2018, Autoliv completed the spin-off of its former Electronics segment through the distribution of all of the issued and outstanding stock of Veoneer, Inc. As the global leader, Autoliv develops, manufactures and markets protective systems, such as airbags, seatbelts, and steering wheels. Our primary focus is to save lives and reduce serious injuries if an accident were to occur.										
R&D facts:		Autoliv has customer technical centers in all key markets and employs 5,700 people in research, development and application engineering; R&D expenditures amounted to \$405.5 million in 2019 and \$412.6 million in 2018.										
Sites (production/R&D):		Autoliv Inc., with its joint ventures, has more than 80 facilities in 27 countries worldwide. In addition, the Company has 14 technical centers and 19 crash test tracks, more than any other automotive safety supplier.										
Main automotive Customers:		All major automotive manufacturers in the world.										
Main automotive products:		Airbag systems / Seatbelt systems / Steering wheels / Pedestrian protection / Additional Safety Features / Future Technologies (Life Cell Airbag, Torricelli Brake)										
Main automotive competitors:		n.a.										
Sources:		Annual Report, Company Information										
Annotations:		*2018, Spin-off of Veoneer completet										



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
37	 Hitachi Ltd. 6-6, Marunouchi 1-chome Chiyoda-ku Tokyo, 100-8280 Japan www.hitachi.com FY ended: March, 31					Smart Live	Thereof Automotive Systems	IT	Mobility	Industry	Others*	
(33)			Mio US\$ 2019/20	80,422	7,719	9.6%	13,512	7,719	19,258	10,498	7,712	29,442
			Mio US\$ 2018/19	85,866	8,794	10.2%	14,938	8,794	19,215	11,137	8,214	33,025
			Mio US\$ 2017/18	83,577	8,930	10.7%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
			Mio Yen/¥ 2019/20	8,767,263	841,500	9.6%	1,472,992	841,500	2,099,426	1,144,447	840,749	3,209,649
			Mio Yen/¥ 2018/19	9,480,619	971,000	10.2%	1,649,300	971,000	2,121,600	1,214,100	895,400	3,600,219
			Mio Yen/¥ 2017/18	9,368,600	1,001,000	10.7%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Global Footprint		Employees	Regional Sales		Board							
Total:		2020: 301,056 2019: 295,941	8,767,263 Mio ¥		100.0%							
Automotive:		n.a.	841,500 Mio ¥		9.6%							
Americas:		n.a.	1,102,987 Mio ¥		12.6%							
NAFTA/North America:		n.a.	1,102,987 Mio ¥		12.6%							
South America:		n.a.	n.a.		n.a.							
Asia-Pacific:		n.a.	6,296,632 Mio ¥		71.8%							
Japan:		162,100	4,529,095 Mio ¥		51.7%							
Europe:		n.a.	924,499 Mio ¥		10.5%							
Others:		n.a.	433,145 Mio ¥		5.1%							
Further Information												
Company profile:		Hitachi started domestic production of automotive electric parts in 1930. After 1985 the company started businesses in North America, Europe and Asia areas. It merged former TOKICO and Hitachi Unisia Automotive in 2004. Hitachi Automotive Systems, Ltd. was established on July 1st, 2009 by splitting off of Automotive Systems from Hitachi, Ltd. yen. Today it is Part of Smart Life section.										
Revenue split:		See business segments above. Automotive segment revenues were 841.5 billion yen in FY 2019/20. Total consolidated overseas revenues were 4,238.1 billion, 48% of sales.										
Sites (production/R&D):		Number of consolidated subsidiaries: 803, thereof more than 181 in Japan. Subsidiaries: Clarion Co., Ltd.; Hitachi Automotive Systems, Ltd., Hitachi Automotive Products (USA), Inc., Hitachi Auto Parts & Service Co., Ltd.										
R&D facts:		R&D expenditure was 293.7 billion yen in FY 2019/20, 323.1 billion yen in FY 2018/19, 332.9 billion yen in FY 2017/2018, 323.9 billion yen in FY 2016/2017. R&D expenditure for Automotive Systems was 64.1 billion yen in FY 2018/19, 69.2 billion yen in FY 2017/2018 and 70.6 billion yen in FY 2016/2017.										
Main automotive products:		Automotive systems: powertrain systems, chassis systems, advanced driver assistance systems.										
Main automotive competitors:		Main automotive competitors: E. g. Fujitsu, Panasonic (Matsushita Electric/National), Mitsubishi Electric, Toshiba etc.										
Sources:		Annual Report, Company Information										
Annotations:		*other Hitachi segments are Energy, Hitachi Construction Machinery, Hitachi Metals, Hitachi Chemical and Others.										



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
38 ▲ (40)	 Hella KGaA Hueck & Co. Rixbecker Straße 75 59552 Lippstadt North-Rhine-Westphalia Germany www.hella.com FY ended: May, 31		in figures only:	in figures:	in % of Total Sales:	Automotive	Aftermarket	Special Applications					
			Mio US\$ 2019/20	7,825	7,378	94.3%	6,454	744	447				
			Mio US\$ 2018/19	8,343	7,864	94.3%	6,420	1,451	508				
			Mio US\$ 2017/18	7,442	7,064	94.9%	5,683	1,381	435				
			Mio Euro/€ 2019/20	6,990	6,591	94.3%	5,766	665	399				
			Mio Euro/€ 2018/19	7,060	6,655	94.3%	5,433	1,228	430				
			Mio Euro/€ 2017/18	6,585	6,251	94.9%	5,029	1,222	385				
	Global Footprint	Employees	Regional Sales		Board								
	Total:	2019: 38,845 2018: 40,261	6,990 Mio €		100.0%		Dr. Rolf Breidenbach: President & CEO, Automotive Electronic; Frank Huber: Automotive Lighting; Nicole Schneider: Human Resources; Dr. Werner Benade: Aftermarket & Special Applications; Bernhard Schäferbarthold: Finance and Controlling and Information Technology;						
	Automotive:	n.a.	6,591 Mio €	94.3%	Contact: https://www.hella.com/hella-com/en/Contact-563.html Annual Report: https://www.hella.com/hella-com/en/Annual-Report-and-Consolidated-Financial-Statement-8740.html Press Releases: https://www.hella.com/hella-com/en/Press-7633.html								
	Americas:	7,770	1,381 Mio €	20.0%									
	NAFTA/North America:	n.a.	n.a.	n.a.									
	South America:	n.a.	n.a.	n.a.									
	Asia-Pacific:	6,215	1,129 Mio €	16.0%									
	Japan:	n.a.	n.a.	n.a.									
	Europe (excl. Germany):	14,760	2,110 Mio €	30.0%									
	Germany:	9,711	2,348 Mio €	34.0%									
	Further Information												
	Company profile:	Hella is a family-run company listed on the stock market and one of the 100 largest German industrial companies. As one of the top 40 automotive suppliers worldwide, HELLA specialises in innovative lighting systems and vehicle electronics and have been a reliable partner for the automobile industry for more than one hundred years. What's more, we are an established supplier in the European aftermarket. In the fiscal year 2017/18, the Group achieved sales of € 7.0 billion and had around 39,000 employees.											
	Revenue split:	n.a.											
	Sites (production/R&D):	39,000 employees are working at more than 125 locations in some 35 countries.											
	R&D facts:	Research and Development expenses in fiscal year 2018/19 accounted to € 611 million (2016/17 € 568 million), equivalent to 8.8% of consolidated sales with 7,768 employees working in R&D.											
	Main automotive Customers:	Hella has established customer relationships with leading car manufacturers as well as system suppliers worldwide as well as international and national wholesale companies for automotive parts.											
	Main automotive products:	Lighting: headlamps, rear lamps, multi-function lamps, interior lighting, lighting electronics Electronics: body electronics, energy management components, driver assistance systems, sensors, actuators, steering systems In Joint Ventures: front-end modules, climatic systems and electrical systems Aftermarket: supply of automotive spare parts (e.g., lighting, electronics, electrics, thermal management, brake system) to wholesalers & garages, workshop equipment, diagnostic tools Special Applications: lighting and electronic products for special vehicles such as buses, caravans, agricultural and construction vehicles; road, industrial and interior lighting; airport lighting											
	Main automotive competitors:	n.a.											
	Sources:	Annual Reports											
	Annotations:												



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
39 ▲ (42)	 Toyoda Gosei Co., LTD. 1 Haruhinagahata Kiyosu Aichi, 452-8564 Japan www.toyoda-gosei.com FY ended: March, 31		in figures only:	in figures:	In % of Total Sales:								
			Mio US\$ 2019/20	7,457	7,308*	98.0%							
			Mio US\$ 2018/19	7,614	7,462*	98.0%							
			Mio US\$ 2017/18	7,199	7,069	98.2%							
			Mio Yen/¥ 2019/20	812,937	796,678*	98.0%							
			Mio Yen/¥ 2018/19	840,714	823,899*	98.0%							
			Mio Yen/¥ 2017/18	806,938	792,397	98.2%							
	Global Footprint	Employees	Regional Sales		Board								
	Total:	2019: 39,403 2018: 39,429	812,937 Mio ¥		100.0%		President: Naoki Miyazaki; Executive Vice President: Toru Koyama; Directors, Corporate Officers: Masakazu Hashimoto, Tomonobu Yamada, Hiroshi Yasuda, Masaki Oka; Corporate Officers: Takashi Ishikawa, Ryo Onishi, Yoshiyuki Fujita, Junichiro Kako, Hiroki Fukui, Todd Huber, Hiroyasu Hirayama						
	Automotive:	n.a.	796,678 Mio ¥	98.0%	Investor Relations: https://www.toyoda-gosei.com/ir/ Press Releases: https://www.toyoda-gosei.com/kigyosupply/ Suppliers: https://www.toyoda-gosei.com/kigyosupply/								
	Americas:	n.a.	n.a.	n.a.									
	NAFTA/North America:	n.a.	n.a.	n.a.									
	South America:	n.a.	n.a.	n.a.									
	Asia-Pacific:	n.a.	n.a.	n.a.									
	Japan:	n.a.	n.a.	n.a.									
	Europe:	n.a.	43,942 Mio ¥	5.2%									
	Germany:	n.a.	n.a.	n.a.									
	Further Information												
	Company profile:	Toyoda Gosei is a global supplier of automotive components and LEDs with a network of 65 bases in 17 countries and regions worldwide. Toyota holds more than 40% of shares and is main shareholder of Toyoda Gosei.											
	Revenue split:	The automotive parts business unit has four areas of expertise, namely Interior and Exterior Parts about 35%, Weatherstrips about 18%, Functional Components about 15%, Safety System Products about 27% and LED about 5%.											
	Sites (production/R&D):	Toyoda Gosei has 64 group companies in 17 countries and regions.											
	R&D facts:	R&D costs 2019: 31,374 million yen (Cost of Revenue: 3.9%); 2018: 30,025 million yen (Cost of Revenue: 3.6%); 2017: 27,684 million yen (Cost of Revenue: 3.3%).											
	Main automotive Customers:	Sales Toyota Motors 478,374 million yen; Toyota Group 57,672 million yen; GM 6,200 million yen; Ford 7,730 million yen; Daimler 8,217 million yen; FiatChrysler 5,697 million yen; Great Wall Motor 2,043 million yen; BMW 2,860 million yen; Audi 398 million yen.											
	Main automotive products:	Manufacturing/sales of automotive parts (Weatherstrips, functional parts, interior and exterior products, safety systems); Manufacture/sales of other products (Optoelectronics products, general industry products); Management of sports teams and sports facilities.											
	Main automotive competitors:	n.a.											
	Sources:	Company Information											
	Annotations:	*Estimations											



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
40 ▲ (46)	 Harman International 400 Atlantic Street Suite 1500 Stamford Connecticut, CT 06901 USA www.harman.com FY ended: June, 30		in figures only:	in figures: in % of Total Sales:	Connected Car Lifestyle Audio Professional Solutions Connected-Services Others						
			Mio US\$ 2019	10,081	*7,057	70.0%	n.a.	n.a.	n.a.	n.a.	n.a.
			Mio US\$ 2018	9,979	*6,985	70.0%	3,102	2,138	1,014	694	151
			Mio US\$ 2017	8,154	*5,700	70.0%	2,911	1,813	1,049	381	164
			Mio KRW 2019	11,749,815	8,224,870	70.0%	n.a.	n.a.	n.a.	n.a.	n.a.
			**Mio KRW 2018	10,971,146	7,679,802	70.0%	n.a.	n.a.	n.a.	n.a.	n.a.
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: n.a. 2018: approximately 33,000	10,081 Mio US\$	100.0%	President and Chief Executive Officers: Michael Mauser, Sandy Rowland; Chief Financial Officer: Ralph Santana; Chief Marketing Officer: Kelei Shen; Chief Technology Officer: John Stacey; President, Connected Car: Dave Rogers; President, Lifestyle Audio: Brian Divine;						
	Automotive:	n.a.	7,057 Mio US\$	70.0%	Annual Reports: http://investor.harman.com/financials.cfm Press Releases: http://news.harman.com/						
	Americas:	n.a.	n.a.	n.a.							
	NAFTA/North America:	n.a.	n.a.	n.a.							
	South America:	n.a.	n.a.	n.a.							
	Asia-Pacific:	n.a.	n.a.	n.a.							
	Japan:	n.a.	n.a.	n.a.							
	Europe:	n.a.	n.a.	n.a.							
	Further Information										
	Company profile:	Harman is the parent company behind an array of legendary brands that includes Harman Kardon, JBL, Mark Levinson and Infinity. They are a leading global provider of premium audio and infotainment solutions, engaging customers around the home, in the car and on the go. Since March 2017 HARMAN International is a wholly-owned subsidiary of Samsung Electronics Co., Ltd.									
	Revenue split:	n.a.									
	Sites (production/R&D):	Harman products are sold worldwide, the largest markets of which are the United States and Germany. Significant portions of net sales are denominated in Euros. Manufacturing facilities are located in North America, Europe, Asia and South America. European manufacturing facilities for Lifestyle segment are located in Germany, France and Hungary. These facilities are used to manufacture automotive audio systems.									
	R&D facts:	n.a.									
	Main automotive Customers:	Global customers for premium audio and infotainment systems include BMW, Fiat/Chrysler, VW/Audi, Toyota/Lexus and others.									
	Main automotive products:	Infotainment systems are a combination of information and entertainment components that may include or control GPS navigation, traffic information, bluetooth, voice-activated telephone, texting and climate control, multi-seat entertainment, digital media compatibility, wireless Internet access, hard disk recording and MP3 playback. Harman also has a connected radio platform which targets the entry-level segment and provides the ability to add smart-phone connectivity, turn-by-turn navigation and voice prompts. Infotainment systems also integrate driver safety capabilities such as lane guidance, traffic sign recognition, pre-crash emergency braking, adaptive cruise control and night vision. The Lifestyle segment designs, manufactures and markets automotive audio systems for vehicle applications to be installed primarily as original equipment by automotive manufacturers, and a wide range of mid-to high-end loudspeaker and electronics for home, multimedia and mobile applications.									
	Main automotive competitors:	Infotainment market: Alpine, Bosch, Panasonic, Continental, Visteon, Mitsubishi Electronics, Aisin Seiki, Delphi and Denso. Automotive audio market: Bose, Pioneer ASK, Foster Electric, Bang & Olufsen, Delphi and Panasonic.									
	Sources:	Annual Report, Samsung, Company Information Harman									
	Annotations:	*Estimated **Since March 2017 HARMAN International is a wholly-owned subsidiary of Samsung Electronics Co., Ltd.									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
41 ▼ (36)	 Melrose Industries PLC (GKN) Leconfield House Curzon Street London W1J 5JA www.melroseplc.net/ FY ended: Dec, 31		in figures only:	in figures: in % of Total Sales:	Automotive Powder Metallurgy Other Businesses Aerospace Nortek Air & Security						
			Mio US\$ 2019	14,801	7,047	48.0%	6,051	1,421	904	4,918	1,504
			Mio US\$ 2018	11,498	8,155	71.0%	3,922	1,130	1,184	3,312	1,948
			Mio US\$ 2017	15,480	8,052	60.0%	6,842	1,513	373	4,689	2,062
			Mio GBP/£ 2019	11,592	5,519	48.0%	4,739	1,115	708	3,852	1,178
			Mio GBP/£ 2018	8,606	6,104	71.0%	2,936	846	886	2,479	1,458
			Mio GBP/£ 2017	12,009	6,247	60.0%	5,308	1,174	289	3,638	1,600
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 55,000 2018: 60,908	11,592 Mio £	100.0%	Justin Dowley: Non-executive Chairman; Christopher Miller: Executive Vice-Chairman; David Roper: Executive Vice-Chairman; Simon Peckham: Chief Executive; Geoffrey Martin: Group Finance Director						
	Automotive:	n.a.	5,519 Mio £	48.0%	Contact: https://www.melroseplc.net/contact/ Annual Report: https://www.melroseplc.net/investors/ Press Releases: https://www.melroseplc.net/media/						
	Americas:	n.a.	6,073 Mio £	52.0%							
	NAFTA/North America:	n.a.	6,073 Mio £	52.0%							
	Asia-Pacific:	n.a.	n.a.	n.a.							
	UK:	n.a.	1,048 Mio £	9.0%							
	Europe:	n.a.	3,474 Mio £	30.0%							
	Other:	n.a.	2,045 Mio £	18.0%							
	Further Information										
	Company profile:	GKN plc is a British multinational automotive and aerospace components company headquartered in Redditch, Worcestershire. GKN traces its roots back more than 250 years to the Napoleonic Wars. In March 2018 Melrose Industries bought the company after a protracted battle. Melrose is a listed turnaround specialist that buys underperforming engineering or manufacturing businesses with the goal of increasing profitability before selling them on. Melrose will reorganise into five divisions: GKN Aerospace; GKN Automotive; GKN Powder Metallurgy; Nortek Air & Security and Other Industrial.									
	Revenue split:	The results for 2019 include the first full year of ownership of GKN. GKN Automotive sales reduced by 6% over the full year 2019 in line with the market, but saw an improved trend in the second half, being 4% down, despite the General Motors strike in the autumn. Internally the automotive business is principally organised around its two core competencies: Driveline, which is the world's pre-eminent driveshaft manufacturer and ePowertrain, the industry leader in electric powertrains and intelligent all-wheel drive systems. Revenue by business: Driveline 72%, ePowertrain 28%. Revenue by destination: Europe 35%, North America 34%, Rest of the world 31%.									
	Sites (production/R&D):	GKN is a global business with manufacturing facilities, service centres and offices in more than 21 countries across five continents. Approximately 55,000 people work in more than 160 GKN companies and joint ventures in more than 33 countries.									
	R&D facts:	n.a.; In 2018 GKN Automotive invested £50 million in powertrain research and development. There are 5 global technology centres.									
	Main automotive Customers:	In the automotive market, GKN Driveline sells to manufacturers of passenger cars and light vehicles. GKN Automotive supports over 90% of the world's car manufacturers as a market leading developer, manufacturer and supplier of driveline products and systems throughout the global automotive industry.									
	Main automotive products:	Automotive comprises GKN's Driveline, All-Wheel Drive and eDrive (together ePowertrain), and Cylinder Liners businesses; a global technology and systems engineer which designs, develops, manufactures and integrates an extensive range of driveline technologies. Powder Metallurgy produces precision powder metal parts for the automotive and industrial sectors as well as powder metal.									
	Main automotive competitors:	E.g. American Axle & Manufacturing, Arvin Meritor, Borg Warner, Dana, Denso, Delphi, Faurecia, Johnson Controls, Magna, Metaldyne, Midas, NGK, Midas, NGK Spark Plug Co Ltd. Japan, Tomkins plc, Torch Investment Co Ltd. China, Wagon plc UK, Valeo, Visteon Corporation, ZF.									
	Sources:	Annual Report, Company Information									
	Annotations:										



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
42 ▲ (47)	 Sumitomo Rubber Industries Ltd. 3-6-9 Wakinohama-cho Chuo-ku, Kobe Hyogo 651-0072 Japan www.srigroup.co.jp FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Tire Business	Sports Business	Industrial and other Products Business				
			Mio US\$ 2019	8,194	7,041	85.9%	7,041	777	377			
			Mio US\$ 2018	8,099	6,956	85.9%	6,956	765	378			
			Mio US\$ 2017	7,831	6,749	86.2%	6,749	729	353			
			Mio Yen/¥ 2019	893,310	767,551	85.9%	767,551	84,705	41,054			
			Mio Yen/¥ 2018	894,243	768,012	85.9%	768,012	84,477	41,754			
			Mio Yen/¥ 2017	877,866	756,576	86.2%	756,576	81,734	39,556			
			Global Footprint	Employees	Regional Sales		Board					
			Total:	2019: 7,325 2018: 7,175	893,310 Mio ¥	100.0%	Chairman of the Board: Ikuji Ikeda; President and CEO, Representative Director: Satoru Yamamoto; Representative Director and Executive Vice President: Minoru Nishi, Kazuo Kinameri; Director and Managing Executive Officer: Yasutaka Ii; Directors and Senior Executive Officers: Hiroki Ishida, Yutaka Kuroda, Naofumi Harada, Mitsuteru Tanigawa; Directors: Keizo Kosaka, Kenji Murakami, Nobuyuki Kobayashi; Contact: https://www.srigroup.co.jp/english/contact/index.html Annual Report: https://www.srigroup.co.jp/english/ir/index.html Press Releases: https://www.srigroup.co.jp/english/newsrelease/					
			Automotive:	n.a.	767,551 Mio ¥	85.9%						
Americas:	n.a.	156,561 Mio ¥	17.5%									
NAFTA/North America:	n.a.	156,561 Mio ¥	17.5%									
South America:	n.a.	n.a.	n.a.									
Asia-Pacific:	n.a.	497,487 Mio ¥	55.7%									
there from Japan:	n.a.	328,818 Mio ¥	36.8%									
Other Areas:	n.a.	109,688 Mio ¥	12.3%									
Europe:	n.a.	129,574 Mio ¥	14.5%									
Further Information												
Company profile:	Sumitomo Rubber Industries, Ltd. offers its main tire brands — Dunlop, Falken, and Goodyear — for passenger cars, trucks, buses, and motorcycles. The SRI group is a corporate group that includes the Tire Business of Sumitomo Rubber Industries, Ltd. as its core.											
Revenue split:	Sales revenue in the tire business decreased 0.1% from the previous fiscal year to ¥767,551 million, and business profit decreased 9.8% to ¥46,183 million.											
Sites (production/R&D):	The Sumitomo Rubber Group's consolidated financial statements include those of Sumitomo Rubber Industries and its 98 consolidated subsidiaries (30 domestic, 68 overseas), as well as about 3 equity-method affiliates.											
R&D facts:	n.a.											
Main automotive Customers:	n.a.											
Main automotive products:	Tires and tubes (for automobiles, construction vehicles, industrial vehicles, automotive races and rallies, motorcycles, etc.), Automotive system business (instant mobility systems, deflation warning systems, etc.)											
Main automotive competitors:	Bridgestone, Michelin, Continental, Pirelli, Yokohama, Cooper, Kumho, Toyo, Hankook and others											
Sources:	Company Information											
Annotations:												



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
43 ▲ (44)	 Brose Fahrzeugteile GmbH & Co. KG, Coburg Max-Brose-Straße 1 96450 Coburg Germany www.brose.com FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Door	Seat	Drives	Others			
			Mio US\$ 2019	6,940	6,907	99.5%*	n.a.	n.a.	n.a.	n.a.		
			Mio US\$ 2018	7,445	7,409	99.5%*	3,781	2,363	1,182	n.a.		
			Mio US\$ 2017	7,132	7,094	99.5%	3,646	2,302	1,146	38		
			Mio Euro/€ 2019	6,200	6,170	99.5%*						
			Mio Euro/€ 2018	6,300	6,270	99.5%*	3,200	2,000	1,000	n.a.		
			Mio Euro/€ 2017	6,311	6,277	99.5%	3,226	2,037	1,014	34		
			Global Footprint	Employees	Regional Sales		Board					
			Total:	2019: 26,000 2018: 26,500	6,300 Mio €	100.0%	Ulrich Schrickel: CEO; Thomas Spangler: Executive Vice President Operations; Niklas Beyes: Executive Vice President Commercial Administration; Raymond Mutz: Executive Vice President Drives; Christof Vollkommer: Executive Vice President Exterior; Periklis Nassios: Central Division Purchasing; Sandro Scharlibbe: Executive Vice President Interior					
			Automotive:	n.a.	6,270 Mio €	99.5%						
Americas:	n.a.	n.a.	n.a.									
NAFTA/North America:	n.a.	n.a.	n.a.									
South America:	n.a.	n.a.	n.a.									
Asia-Pacific:	n.a.	n.a.	n.a.									
Japan:	n.a.	n.a.	n.a.									
Europe:	n.a.	n.a.	n.a.									
Germany:	n.a.	n.a.	n.a.									
Further Information												
Company profile:	Brose is the world's fourth-largest family-owned automotive supplier. The company develops and produces mechatronic systems for vehicle doors and seats as well as electric motors, drives and electronics, among others for steering, brakes, transmissions and engine cooling. Approximately 26,000 employees at 64 locations in 24 countries generate turnover of 6.2 billion euros. Worldwide, every second new vehicle is equipped with at least one Brose product.											
Revenue split:	Door 51%, Seat 32%, Drives 17%											
Sites (production/R&D):	With 64 locations in 24 countries, Brose is globally represented on all major automotive markets.											
R&D facts:	8 percent of sales are invested in R&D each year. More than 3,000 employees worldwide work on the development of new products and production processes.											
Main automotive Customers:	About 80 automotive manufacturers and more than 40 tier-one suppliers.											
Main automotive products:	Window regulators, door systems, power liftgate systems, closure systems, seat systems, electric motors and drives, electronics.											
Main automotive competitors:	n.a.											
Sources:	Company Information Company Website											
Annotations:	*Estimated. The company did not publish exact figures.											



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates				
44 ▲ (45)	 American Axle & Manufacturing Inc. One Dauch Drive Detroit MI 48211-1198 USA www.aam.com FY ended: Dec, 31		Mio US\$ 2019	6,531	6,531	100.0%	4,450	1,454	-	628
			Mio US\$ 2018	7,270	7,270	100.0%	4,254	1,097	1,115	804
			Mio US\$ 2017	6,266	6,266	100.0%	4,040	830	807	590
Global Footprint		Employees	Regional Sales		Board					
Total:		2019: 20,000 2018: 25,000	6,531 Mio US\$		100.0%					
Automotive:			20,000	6,531 Mio US\$	100.0%					
Americas:			7,000	5,352 Mio US\$	82.0%					
NAFTA/North America:			7,000	5,247 Mio US\$	80.3%					
South America:			n.a.	105 Mio US\$	1.6%					
Asia-Pacific:			n.a.	571 Mio US\$	8.7%					
China:			n.a.	n.a.	n.a.					
Europe:			n.a.	607 Mio US\$	9.3%					
Germany:			n.a.	n.a.	n.a.					
Further Information										
Company profile:		Founded in 1994, American Axle & Manufacturing Holdings (AAM) is a leading Tier I automotive supplier of driveline and drivetrain systems and related components, chassis systems and metal formed products. On April 2017, Alpha SPV I, Inc., a wholly-owned subsidiary of AAM, merged with and into Metaldyne Performance Group, Inc. (MPG), with MPG as the surviving corporation in the merger. Upon completion of the merger, MPG became a wholly-owned subsidiary of AAM. In the fourth quarter of 2019, AAM completed the sale of the U.S. operations of the Casting segment.								
Revenue split:		Net sales were \$6,530.9 million in 2019 as compared to \$7,270.4 million in 2018. The three segments are Driveline, Metal Forming and Casting. In the first quarter of 2019, AAM reorganized its business to disaggregate our former Powertrain segment, with a portion moving to Driveline segment and a portion moving to Metal Forming segment. The Powertrain amounts previously reported for the years ended December 31, 2018 and 2017 have been reclassified to Driveline and Metal Forming accordingly. Sites (production/R&D): AAM operates at more than 80 facilities in 17 countries.								
Sites (production/R&D):		AAM's global footprint includes nearly 80 locations across four continents (North America, South America, Asia and Europe).								
R&D facts:		R&D spending was \$144.7 million in 2019 as compared to \$146.2 million in 2018.								
Main automotive Customers:		General Motors, FCA, Ford, Jaguar Land Rover, Mercedes-AMG. Sales to GM were approximately 37% of consolidated net sales in 2019, 41% in 2018, and 47% in 2017. Sales to FCA were approximately 17% of consolidated net sales in 2019, 13% in 2018 and 14% in 2017.								
Main automotive products:		Driveline products consist primarily of front and rear axles, driveshafts, differential assemblies, clutch modules, balance shaft systems, disconnecting driveline technology, and electric and hybrid driveline products and systems for light trucks, sport utility vehicles (SUVs), crossover vehicles, passenger cars and commercial vehicles; Metal Forming products consist primarily of axle and transmission shafts, ring and pinion gears, differential gears and assemblies, connecting rods and variable valve timing products for Original Equipment Manufacturers and Tier 1 automotive suppliers; and prior to the Casting Sale, the Casting segment produced both thin wall castings and high strength ductile iron castings, as well as transmission pump bodies, steering knuckles, control arms, brake anchors and calipers, and ball joint housings for the global light vehicle, commercial and industrial markets.								
Main automotive competitors:		Principal competitors include Dana Holding Corporation, GKN plc, Magna International Inc., ZF Friedrichshafen AG, Linamar Corporation, Meritor Inc. and the in-house operations of various global OEMs.								
Sources:		Annual Report								
Annotations:		*) See Company Profile								



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
45 ▼ (43)	 Benteler International AG Schillerstrasse 25-27 5020 Salzburg Austria www.benteler.com FY ended: Dec, 31		Mio US\$ 2019	8,620	*6,465	*75.0%	n.a.	n.a.	n.a.		
			Mio US\$ 2018	9,539	7,449	76.2%	7,449	1,425	956		
			Mio US\$ 2017	8,878	7,115	80.1%	7,115	1,156	809		
			Mio Euro/€ 2019	7,700	5,775	75.0%	n.a.	n.a.	n.a.		
			Mio Euro/€ 2018	8,072	6,304	76.2%	6,304	1,206	761		
			Mio Euro/€ 2017	7,856	6,296	80.1%	6,296	1,023	716		
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 30,000 2018: 28,578	7,700 Mio €		100.0%						
Automotive:			n.a.	5,775 Mio €	75.0%						
Americas:			n.a.	n.a.	n.a.						
NAFTA/North America:			n.a.	n.a.	n.a.						
South America:			n.a.	n.a.	n.a.						
Asia-Pacific:			n.a.	n.a.	n.a.						
Africa:			n.a.	n.a.	n.a.						
Europe:			n.a.	n.a.	n.a.						
Germany:			n.a.	n.a.	n.a.						
Further Information											
Company profile:		Benteler is a global, family-owned company serving customers in automotive technology, the energy sector and mechanical engineering. The portfolio encompasses components and modules for the automotive industry, in the areas of chassis, body, engine and exhaust systems, as well as system solutions for electric vehicles. We develop technical equipment and plant for leading automotive suppliers and for the glass-processing industry. Under the management of the strategic holding Benteler International AG, headquartered in Salzburg, Austria, our around 30,000 employees at 141 locations in 38 countries offer first-class manufacturing and distribution competence. Since 2018, the Benteler Group has been implementing a transformation program with the goal of improving cost structures, growing profitably and securing the financial future in the long term. Thus a comprehensive restructuring process was initiated at an early stage, in which the course has already been set: The company concentrates on its core business as a metal process specialist with a focus on the automotive sector. In the Automotive Division, Benteler has improved purchasing processes and created a more cost-efficient, leaner organization; targeted investments were made in the growth area of electromobility and strategic partnerships in the technology environment.									
Sites (production/R&D):		n.a.									
R&D facts:		n.a.									
Main automotive Customers:		Nearly all major automotive manufacturers worldwide; several automotive suppliers.									
Main automotive products:		Benteler Automotive develops and manufactures components and modules for bodies, chassis, and engines. The Division also offers its customers system solutions for electric vehicles. As a highly innovative partner the Automotive division also supports its customers throughout the value chain – from development and production through to assembly.									
Main automotive competitors:		Automotive suppliers in our business fields.									
Sources:		Annual Report									
Annotations:		*estimated; Benteler has not yet published figures for 2019.									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates											
46 ▼ (41)	 Motherson Sumi Systems Ltd. Plot No. 1, Sector-127 Noida-Greater Noida, Expressway Noida 201301, U.P./India www.motherson.com FY ended: March, 31		in figures only:	in figures:	in % of Total Sales:	SMP	SMR	PKC								
			Mio US\$ 2019*	6,271	6,271	100.0%	4,541	1,733	n.a.							
			Mio US\$ 2018	7,630	7,630	100.0%	4,345	1,895	1,390							
			Mio US\$ 2017	5,678	5,678	100.0%	3,901	1,780	1,179							
			Mio Euro/€ 2019	5,602	5,602	100.0%	4,056	1,584	n.a.							
			Mio Euro/€ 2018	6,457	6,457	100.0%	3,677	1,604	1,176							
			Mio Euro/€ 2017	6,070	6,070	100.0%	3,452	1,575	1,043							
			Global Footprint	Employees	Regional Sales		Board									
			Total:	2019: 30,083 2018: 32,542		5,602 Mio €	100.0%	Managing Director, Chairman and CEO: Laksh Vaaman Sehgal; Managing Director: Andreas Heuser; Resident Managing Directors: Jacob Meint Buit, Randolph de Cuba Contact: https://www.motherson.com/media Annual Reports: https://www.motherson.com/performance								
			Automotive:		30,083	5,602 Mio €	100.0%									
Americas:		n.a.	1,229 Mio €	22.0%												
NAFTA/North America:		n.a.	n.a.	n.a.												
Asia-Pacific:		n.a.	914 Mio €	16.0%												
therefrom India:		n.a.	n.a.	n.a.												
Europe:		n.a.	3,460 Mio €	62.0%												
Further Information																
Company profile:	Motherson Sumi Systems Limited (MSSL) the flagship company of the Samvardhana Motherson Group, was established in 1986 in a joint venture between Samvardhana Motherson Group and Sumitomo Wiring Systems (Japan). Samvardhana Motherson Automotive Systems Group BV together with its subsidiaries business consists of Samvardhana Motherson Reflectec Group (SMR Group) and Samvardhana Motherson Peguform Group including Samvardhana Motherson innovative Autosystems (SMIA) together referred to as SMP Group. SMP division also includes SMRC Group which was acquired on August 02, 2018 by SMRP BV by purchasing 100% stake in Reydel Automotive Holdings B.V. and Reydel Automotive Management B.V. The Samvardhana Motherson Group is one of the largest manufacturers of exterior rearviewmirrors in the world.															
Revenue split:	SMR represents subsidiaries of Samvardhana Motherson Reflectec Group Holdings Limited which are engaged in development, manufacture and supply of rear view mirrors and drive assistance systems. SMP represents subsidiaries of Samvardhana Motherson Automotive Systems Group B.V. (SMRP BV) (an overseas subsidiary of the Company) which are engaged in manufacturing and supplies of plastic parts and system modules for vehicle interiors and exteriors. For the year ended March 31, 2020 Group's revenue increased to € 5,603 million, representing annual growth of 5% over the corresponding previous year's revenue of € 5,312 million. Revenue by country: Germany 25%, USA 12%, Hungary 12%, France 10%, Spain 9%, China 7%, Mexico 6%, Korea 6%, Brazil 3%, KK 2%, India 2%, Portugal 2%, Others 4%.															
Sites (production/R&D):	From its division headquarters in Stuttgart, Germany, SMR operated 22 manufacturing facilities with presence in 16 countries and employed 7,861 people as of March 31, 2020. SMP has 48 manufacturing facilities in 20 countries and employed 22,222 people as of March 31, 2020.															
R&D facts:	6 research and development laboratories. During the fiscal year 2019/20 the Group incurred expenditures of € 168 million as compared to € 144 million for the fiscal year 2018/19.															
Main automotive Customers:	Audi 18%, Daimler 17%, VW 12%, PSA 9%, Renault/Nissan 9%, BMW 6%, Porsche 5%, Ford 4%, Hyundai 4%, GM 3%, Seat 2%, JLP 1%, Kia 1%, Others 9%.															
Main automotive products:	SMR division produces a wide range of rear-view vision systems primarily for light vehicles and is a leading global supplier of exterior mirrors. SMP division produce various polymer-based interior and exterior products for light vehicles. SMP's product portfolio is primarily comprised of complete modules, including door panels, instrument panels and bumpers as well as other plastic components and systems, such as centre consoles, decorative interior trims and plastic body parts.															
Sources:	Company Information															
Annotations:	* Effective April 01, 2019, IFRS16 became applicable on the Group replacing IAS17 and other related interpretations. The Group has adopted the standard without restating comparative amounts for period(s) as permitted by the modified retrospective approach.															



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates											
47 ▲ (59)	 Hanon Systems 95, Sinilseo-ro, Daedeok-gu, Daejeon, Korea www.hanonsystems.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:											
			Mio US\$ 2019	6,137	6,137	100.0%										
			Mio US\$ 2018	5,402	5,402	100.0%										
			Mio US\$ 2017	4,947	4,947	100.0%										
			Mio KRW 2019	7,154,153	7,154,153	100.0%										
			Mio KRW 2018	5,938,000	5,938,000	100.0%										
			Mio KRW 2017	5,585,700	5,585,700	100.0%										
			Global Footprint	Employees	Regional Sales		Board									
			Total:	2019: n.a. 2018: 22,000		7,154,153 Mio KRW	100.0%	Jeong Won Son: CEO & President; Nurdal Kücükçaya: President; Tracy Stallings: Director of Global Corp. Communications; In-Young Lee: Exec. Advisor; Suk Sung Min: Exec. Vice Resident Annual Reports: https://www.hanonsystems.com/En/Investors/AnnualReport Press Releases: https://www.hanonsystems.com/En/Media/News Suppliers: http://www.hanonsystems.com/En/Suppliers								
			Automotive:		n.a.	7,154,153 Mio KRW	100.0%									
Americas:		n.a.	n.a.	n.a.												
NAFTA/North America:		n.a.	n.a.	n.a.												
South America:		n.a.	n.a.	n.a.												
Asia:		n.a.	n.a.	n.a.												
Korea:		n.a.	n.a.	n.a.												
Europe:		n.a.	n.a.	n.a.												
Germany:		n.a.	n.a.	n.a.												
Further Information																
Company profile:	Hanon Systems - former HVCC (Halla Visteon Climate Control Corp.) - is a full-line supplier of automotive thermal management solutions and has been a reliable partner for auto-makers worldwide since its establishment in 1986. In July 2015, HVCC changed its name to Hanon Systems along with its ownership and management structure. The transition of majority ownership was made in June as Visteon Corp. sold its ownership interest to Hahn & Co. Auto Holdings and Hankook Tire.															
Revenue split:	European customers accounted for 34% of sales, surpassing domestic demand (27%); Asia (18%). In addition, drastic export increase to the Americas boosted the region's proportion to 22% in 2019.															
Sites (production/R&D):	51 manufacturing sites, 35 affiliates and 23 engineering sites in 19 Countries															
Main Automotive Customers:	Main automotive Customers: Ford (16%), HMG (43%), VW (6%), GM (5%), FCA (4%), Daimler (3%), BMW (3%) and others (20%).															
R&D facts:	R&D expenditures were 360 KRW billion in 2019, 297 KRW billion in 2018, 259 KRW billion in 2017 and 234 KRW billion in 2016.															
Main automotive products:	Thermal management solutions															
Main automotive competitors:	n.a.															
Sources:	Company Information															
Annotations:																



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
48 ▲ (50)	 Koito Manufacturing 4-8-3, Takanawa Minato-ku Tokyo 108-8711 Japan www.koito.co.jp FY ended: March, 31		in figures only:	in figures*: in % of Total Sales:							
			Mio US\$ 2019/20*	7,347	6,098	83.0%					
			Mio US\$ 2018/19*	7,483	6,211	83.0%					
			Mio US\$ 2017/18*	7,573	6,323	83.5%					
			Mio Yen/¥ 2019/20*	800,928	664,770	83.0%					
			Mio Yen/¥ 2018/19*	826,257	685,793	83.0%					
			Mio Yen/¥ 2017/18*	848,868	708,805	83.5%					
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2020: 24,769 2019: 24,608		800,928 Mio ¥	100.0%	Chairman and CEO: Masahiro Otake; President and COO: Hiroshi Mihara; Executive Vice Presidents: Koichi Sakakibara, Kenji Arima; Senior Managing Directors: Masami Uchiyama, Michiaki Kato, Hideharu Konagaya, Katsuyuki Kusakawa; Director and Senior Adviser: Takashi Ohtake; Directors and Managing Corporate Officers: Hideo Yamamoto, Jun Toyota, Takayuki Katsuda; Directors: Haruya Uehara, Kingo Sakurai					
	Automotive:		n.a.	664,770 Mio ¥	83.0%						
	Americas:		n.a.	181,981 Mio ¥	22.7%						
	NAFTA/North America:		n.a.	181,981 Mio ¥	22.7%						
	China:		n.a.	93,670 Mio ¥	11.7%						
	Asia-Pacific:		n.a.	579,085 Mio ¥	72.3%						
	Japan:		n.a.	383,672 Mio ¥	47.9%						
	Europe:		n.a.	35,072 Mio ¥	4.4%	Press Releases: https://www.koito.co.jp/english/news/new/ Annual Reports: https://www.koito.co.jp/english/ir/ Press Releases: https://www.koito.co.jp/english/news/					
	Other Regions:		n.a.	4,788 Mio ¥	0.6%						
	Further Information										
	Company profile:	The KOITO Group produces automotive lighting equipment in Japan and eight other countries, supplying customers in the four major regions of the world. today, the Group's lighting technologies are used worldwide in wide range of fields. the group produces automotive lighting equipment in Japan and eight other countries, supplying customers in the four major regions of the world. Koito includes 3 divisions: Automotive lighting Equipment, non-automotive Electrical Equipment, other Products and Services. Toyota is one of the major shareholders of the company.									
	Revenue split:	The KOITO Group produces primarily automotive lighting equipment in Japan and overseas and supplies products to countries around the world as a global supplier for railroad car control equipment, aircraft components, and seats for railroad cars and aircraft. Each local subsidiary is an independent business entity, and the Group does business by establishing a comprehensive plan for each region. The Company's six reporting segments are therefore geographical segments based on production and sales structures, comprising Japan, North America, China, Asia, Europe and Other regions.									
	Sites (production/R&D):	The group comprises the parent company and about 30 subsidiaries and offices.									
	R&D facts:	FY 2019, 2018 and 2017: n.a. In fiscal 2016, R&D expenditure totaled ¥32.6 billion (4% of consolidated net sales); ¥14.8 billion in Japan and ¥17.8 billion in North America, China, Asia and Europe.									
	Main automotive products:	Manufacturing and marketing of automotive lighting equipment, aircraft parts, electrical equipment and other products.									
	Main automotive competitors:	Hella, Automotive Lighting, Osram, Philips, Stanley Electric, Bosch etc.									
	Sources:	Company Information									
	Annotations:	* Estimation; segment data of company not available anymore since FY 2010/2011									





Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
49 ▲ (53)	 PPG Industries Inc. One PPG Place Pittsburgh Pennsylvania 15272 USA www.ppg.com FY ended: Dec, 31		in figures only:	in figures*: In % of Total Sales:	Performance Coatings Industrial Coatings Glass						
			Mio US\$ 2019	15,146	5,967	39.4%	9,034	6,112	n.a.		
			Mio US\$ 2018	15,374	6,025	39.2%	9,987	6,287	n.a.		
			Mio US\$ 2017	14,750	5,855	39.7%	8,732	6,018	217		
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 43,000 2018: 43,100		15,146 Mio US\$	100.0%	Michael H. McGarry: Chairman and CEO; Anne M. Foulkes: Senior Vice President and General Counsel; Timothy M. Knavish: Executive Vice President; Rebecca B. Liebert: Executive Vice President; Vincent J. Morales: Senior Vice President and CFO; Amy R. Ericson: Senior Vice President, Packaging Coatings; Ramaparasad Vadlamannati: Senior Vice President, Protective and Marine Coatings and President PPG EMEA					
	Automotive:		n.a.	5,967 Mio US\$	39.4%						
	Americas:		n.a.	8,055 Mio US\$	53.2%						
	NAFTA/North America:		n.a.	6,475 Mio US\$	42.8%						
	South America:		n.a.	1,580 Mio US\$	10.4%						
	Asia-Pacific:		n.a.	2,542 Mio US\$	16.8%	Annual Report: http://investor.ppg.com/ Press Releases: https://news.ppg.com/ Suppliers: http://corporate.ppg.com/Purchasing.aspx					
	Japan:		n.a.	n.a.	n.a.						
	Europe**:		n.a.	4,549 Mio US\$	30.0%						
	Further Information										
	Company profile:	Founded in 1883, PPG is a major global supplier of coatings. The Performance Coatings, Industrial Coatings and Architectural Coatings – EMEA reportable segments supply coatings for customers in wide array of end-use markets, including industrial equipment, appliances and packaging; marine and aircraft equipment; automotive original equipment and other industrial and consumer products. In addition PPG supplies refinishes to the automotive aftermarket. In September 2017 PPG completed the sale of its North American fiber glass business, resulting in the exit of all glass operations. Since then PPG has two reportable business segments.									
	Revenue split:	Automotive sales generated by segments: performance coatings (automotive refinish) and industrial coatings (industrial & automotive OEM coatings).									
	Sites (production/R&D):	The Company's manufacturing facilities, sales offices, research and development centers and distribution centers are located throughout the world. As of February 21, 2019, the Company operated 128 manufacturing facilities in 39 countries.									
	R&D facts:	Research and development costs, including depreciation of research facilities, were \$456 million, \$464 million and \$472 million during 2019, 2018 and 2017, respectively. The Company's principal research and development centers are located in Allison Park, Pa.; Marly, France; Milan, Italy; Monroeville, Pa.; Burbank, Calif.; Tianjin, China; Amsterdam, Netherlands and Tepexpan, Mexico.									
	Main automotive Customers:	Daimler, Chrysler, Ford, Renault-Nissan, Toyota, PSA, other major manufacturers, Body Shops and Distributors, Light Industrial, Insurance Companies.									
	Main automotive products:	Coatings, sealants, adhesives, metal pretreatment products, flat glass, fabricated glass products, continuous-strand fiber glass products, chemicals including photochromic ophthalmic lenses, optical monomers, silicas and fine chemicals, automotive coatings, products include electrocoats, primer surfacers, base coats, clearcoats, bedliner, pretreatment chemicals, adhesives and sealants.									
	Main automotive competitors:	Akzo Nobel N.V., Axalta Coating Systems Ltd., BASF Corporation, Benjamin Moore, Cromology, Hempel A/S, Kansai Paints, the Jotun Group, Masco Corporation, Nippon Paint; RPM International Inc, the Sherwin-Williams Company, Tikkurila Oyj and 3M Company.									
	Sources:	Annual Report, Company Information									
	Annotations:	* Automotive sales estimated; **incl. Middle East, Africa									



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:						
50 ▲ (51)	 Hankook Tires Co. Ltd. 647-15 Yeoksam-dong Gangnam-gu, Seoul (Postal Code 135-723), South Korea http://global.hankook-tire.com FY ended: Dec, 31										
			Mio US\$ 2019	5,904	5,904	100.0%					
			Mio US\$ 2018	6,181	6,181	100.0%					
			Mio US\$ 2017	6,034	6,034	100.0%					
			Mio KRW/Won 2019	6,883,269	6,883,269	100.0%					
			Mio KRW/Won 2018	6,795,089	6,795,089	100.0%					
			Mio KRW/Won 2017	6,813,400	6,813,400	100.0%					
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 21.000 2018: 21,000		6,883,269 Mio KRW	100.0%	Hyunshick Cho: Vice Chairman & CEO; Hyunbum Cho: President & CEO; Sooil Lee: President & COO; Dong Hoan Moon: Executive Vice President; Shin Hong Kim: Senior Vice President; Bon Hee Ku: Senior Vice President, Chief Technology Officer;					
	Automotive:		21,000	6,883,269 Mio KRW	100.0%						
	Americas:		n.a.	n.a.	n.a.						
	NAFTA/North America:		n.a.	n.a.	n.a.						
	South America:		n.a.	n.a.	n.a.						
	China:		n.a.	n.a.	n.a.						
	Korea:		n.a.	n.a.	n.a.						
	Europe:		n.a.	n.a.	n.a.						
	Germany:		n.a.	n.a.	n.a.						
	Further Information										
	Company profile:	Hankook Tire was established in 1941 as the first tiremaker in Korea. Today, Hankook Tire is the seventh largest and one of the fastest growing tire manufacturers in the world. It produces radial tires for passenger cars, 4x4s, SUV, light trucks, campers, trucks, buses and motor sports. Over 80% of Hankook Tire's sales are derived from overseas markets with Europe being the company's biggest market.									
	Sites (production/R&D):	Local offices in 30 countries, 8 production facilities in Korea (2), China (3), USA, Hungary and Indonesia. Available in over 180 countries.									
	R&D facts:	5 R&D centers located in Korea, USA, Germany, China and Japan. Hankook Tire was investing approximately W194,976 million in 2019, W191,348 million in 2018 and W177,662 million in 2017. As of the end of 2019, Hankook's patent portfolio included 813 patents granted in Korea and 221 patents granted overseas.									
	Main automotive Customers:	Audi, BMW, Chrysler, Daihatsu, Ford, GM, ITC, Lincoln, Mitsubishi, VW. Supplier for the Touring Car Series DTM.									
	Main automotive products:	Tires. Hankook Tire & Technology operates four global tires brands: „Hankook“ represents the premium brand in Korea and abroad; „Laufenn“ targets global customers who pursue smart consumption and distinctive style; „Aurora“ and „Kingstar“ were designed to meet specific local needs.									
	Main automotive competitors:	Bridgestone, Michelin, Goodyear, Continental, Pirelli, Sumitomo, Yokohama and others.									
	Sources:	Quarter Report, Company Information									
	Annotations:										



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Overheads and Trunk Trim	Doors and Hard Trim	*Seats and Metals	Lighting	Cockpits & Consoles	
51 ▼ (48)	 Grupo Antolin-Irausa, S.A. Ctra. Madrid-Irún Km. 244,8 Burgos, 09007 Spain www.grupoantolin.com FY ended: Dec, 31										
			Mio US\$ 2019	5,837	5,837	100.0%	2,150	2,212	n.a.	374	1,091
			Mio US\$ 2018	6,411	6,411	100.0%	2,515	2,160	n.a.	383	1,309
			Mio US\$ 2017	5,692	5,692	100.0%	2,293	2,248	31	349	772
			Mio Euro/€ 2019	5,214	5,214	100.0%	1,921	1,976	n.a.	334	975
			Mio Euro/€ 2018	5,425	5,425	100.0%	2,128	1,828	n.a.	324	1,108
			Mio Euro/€ 2017	5,037	5,037	100.0%	2,029	1,989	27	309	683
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 29.755 2018: 30,646		5,214 Mio €	100.0%	Ernesto Antolin Arribas Chairman Jesús Pascual Santos: CEO; María Helena Antolin Raybaud: Vice Chair;					
	Automotive:		29,755	5,214 Mio €	100.0%						
	Americas:		n.a.	2,044 Mio €	39.3%						
	NAFTA/North America:		9,930	1,960 Mio €	37.6%						
	South America:		867	88 Mio €	1.7%						
	Asia-Pacific:		3,376	478 Mio €	9.2%						
	África:		n.a.	47 Mio €	1.0%						
	Europe:		15,027	2,641 Mio €	50.7%						
	Germany:		n.a.	n.a.	n.a.						
	Further Information										
	Company profile:	Grupo Antolin is a leading multinational corporation specializing in the design, development and manufacture of interior components for the automotive industry. We offer products with high added value to outfit automobile interiors: Overheads & Trunk Trim, Doors & Hard Trim, Lighting and Cockpits & Consoles. Our long industrial tradition and mastery of a broad technologies portfolio have positioned us as a key reference in the automotive sector. In 2017 the Group sold its Seat & Metal Business unit to Lear Corporation.									
	Revenue split:	see above									
	Sites (production/R&D):	26 countries, more than 150 production plants and centers Just in Time, 26 technical-commercial offices.									
	R&D facts:	2019 our total R&D spending amounted to €155.7 million or 3.06% of our revenues.									
	Main automotive Customers:	Volkswagen Group, Fiat-Chrysler, Ford, General Motors, Tata Group, BMW Group, Renault–Nissan, PSA, Geely, Hyundai-Kia, Daimler.									
	Main automotive products:	Overhead systems, Door Function, Seat Function, Lighting and Cockpits & Consoles.									
	Main automotive competitors:	Faurecia, Johnson Controls, Lear, Magna, IAC, Brose, Dana, Rieter, Dräxlmaier, Visteon, Polytec									
	Sources:	Annual Report, Company Information									
	Annotations:	*In 2017 the Group sold its Seat & Metal Business unit to Lear Corporation.									



Rank	Company	Currencies	Total Sales	Automotive Sales*		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
52 ▶ (52)	 TE Connectivity Ltd. Rheinstrasse 20 CH-8200 Schaffhausen Switzerland www.te.com FY ended: Sep, 30		in figures only:	in figures:	In % of Total Sales:	Transportation Solutions	Industrial Solutions	Communications Solutions				
			Mio US\$ 2019	13,448	5,686	42.3%*	7,821	3,954	1,673			
			Mio US\$ 2018	13,988	6,092	43.6%*	8,290	3,856	1,842			
			Mio US\$ 2017	12,185	5,228	42.9%*	7,039	3,507	1,639			
Global Footprint			Employees	Regional Sales		Board						
Total:			2019: 78,000 2018: 80,000	13,9448 Mio US\$	100.0%	Terrence R. Curtin: Chief Executive Officer and Director; Alan Amici: Vice President, Chief Technology Officer, Transportation Solutions; Claudia Anderson: Vice President, Chief Continuous Improvement Officer; Mario Calastri: Senior Vice President, Treasurer; Joel Dubs: Senior Vice President, Operations; Joseph F. Eckroth, Jr.: Senior Vice President, CIO;						
Automotive:			n.a.	5,686 Mio US\$	42.3%	Suppliers-Contact: https://supplier.te.com/ Annual Reports: https://investors.te.com/investor-resources/overview/default.aspx Press Releases: https://www.te.com/usa-en/about-te/news-center.html Investors: https://investors.te.com/investor-resources/overview/default.aspx						
Americas:			25,000	4,224 Mio US\$	31.4%							
North America:			n.a.	3,794 Mio US\$	28.2%							
Other America:			n.a.	430 Mio US\$	3.2%							
Asia-Pacific:			22,000	4,401 Mio US\$	32.7%							
therefrom China:			n.a.	2,443 Mio US\$	18.2%							
Europe:**			31,000	4,823 Mio US\$	35.9%							
therefrom Switzerland:			n.a.	3,251 Mio US\$	24.2%							
Further Information												
Company profile:		TE Connectivity Ltd., is a \$13 billion global technology and manufacturing leader creating a safer, sustainable, productive, and connected future. For more than 75 years, TEs connectivity and sensor solutions, proven in the harshest environments, have enabled advancements in transportation, industrial applications, medical technology, energy, data communications, and the home. 78,000 employees, including more than 7,000 engineers, working alongside customers in nearly 150 countries.										
Revenue split:		Net sales of Transportation Solutions decreased 5.7% due primarily to sales declines in the automotive end market.										
Sites (production/R&D):		90 Manufacturing sites and 21 Design Centers in approximately 20 countries, the company operates in over 50 countries and serves customers in more than 150 countries.										
R&D facts:		The amounts expensed in fiscal 2019, 2018, and 2017 were \$572 million, \$606 million, and \$548 million, respectively.										
Main automotive Customers:		All major OEMs and suppliers.										
Main automotive products:		The Transportation Solutions segment is a leader in connectivity and sensor technologies.										
Main automotive competitors:		The Transportation Solutions segment's major competitors include Yazaki, Aptiv, Sumitomo, Sensata, Honeywell, Molex, and Amphenol.										
Sources:		Annual Report, Company Information										
Annotations:		*Automotive represents 73% of Transportation Solutions segment's net sales; **incl. Middle East, Africa										



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
53 ▲ (57)	 Eberspächer Gruppe GmbH & Co. KG Eberspächerstraße 24 73730 Esslingen Baden-Württemberg Germany www.eberspaecher.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:	Exhaust Technology	Climate Control Systems	Automotive Controls				
			Mio US\$ 2019	5,593	5,593	100.0%	4,920	566	73			
			Mio US\$ 2018	5,448	5,448	100.0%	4,802	581	64			
			Mio US\$ 2017	5,064	5,064	100.0%	4,442	559	62			
			Mio Euro/€ 2019	4,966	4,966	100.0%	4,395	506	65			
			Mio Euro/€ 2018	4,610	4,610	100.0%	4,064	492	54			
			Mio Euro/€ 2017	4,481	4,481	100.0%	3,931	495	55			
Global Footprint			Employees	Regional Sales		Board						
Total:			2019: 9,928 2018: 9,862	4,966 Mio €	100.0%	Heinrich Baumann: COO/Managing Partner; Martin Peters: CFO/Managing Partner; Dr. Jörg Schernikau: Climate Control Systems/Automotive Controls; Dr. Thomas Waldhier: Exhaust Technology;						
Automotive:			9,928	4,966 Mio €	100.0%	Contact: https://www.eberspaecher.com/en/contact.html Annual Report: https://www.eberspaecher.com/en/company/facts-figures.html Press Releases: https://www.eberspaecher.com/en/press/press-releases.html Company booklet: https://www.eberspaecher.com/en/company/group-of-companies.html						
Americas:			n.a.	985 Mio €	19.9%							
NAFTA/North America:			n.a.	n.a.	n.a.							
South America:			n.a.	n.a.	n.a.							
Asia-Pacific:*			n.a.	697 Mio €	14.0%							
Japan:			n.a.	n.a.	n.a.							
Europe:**			n.a.	2,224 Mio €	44.8%							
Germany:			n.a.	1,051 Mio €	21.3%							
Further Information												
Company profile:		Founded 1865 - the Eberspächer Group is one of the automotive industry's leading system developers and suppliers. The family business, headquartered in Esslingen am Neckar, stands for innovative solutions in exhaust technology, automotive electronics and thermal management for a broad range of vehicle types. Eberspaecher components and systems provide more comfort, greater safety and a cleaner environment on or off the road.										
Revenue split:		n.a.										
Sites (production/R&D):		International Group with around 80 locations (thereof more than 40 production sites) in 29 countries worldwide.										
R&D facts:		The R&D centers are in Germany: Esslingen, Herxheim, Hermsdorf, Landau, Renningen; China: Shanghai; Canada: Concord; USA: Novi; Worldwide work approx. 900 experts on basic development, on product and system development. R&D expenses 2019: 159.7 million Euro. On average, seven percent of net revenue is invested in research and development.										
Main automotive Customers:		Customers include almost all European and North American, and increasingly more Asian manufacturers of passenger cars, commercial vehicles, buses and coaches and special-purpose vehicles.										
Main automotive products:		Exhaust Technology (exhaust systems for passenger cars, commercial vehicles, on-road / non-road); Climate Control Systems (fuel operated heaters, electrical auxiliary heaters (low and high voltage), climate solutions for special-purpose vehicles, bus & coach (complete thermal management)); Automotive Controls (complex electronic systems for the automotive industry, performance segments (energy management, motormanagement & powertrain, comfort systems, special applications))										
Main automotive competitors:		e.g. Faurecia, Tenneco, Webasto, Boysen										
Sources:		Annual Report, Company Information										
Annotations:		*incl. Africa and Australia **Europe without Germany										


Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
54 ▲ (55)	 Pirelli & C. S.p.A. Viale Piero e Alberto Pirelli n. 25 20126 Milan Lombardy Italy www.pirelli.com FY ended: Dec, 31		Mio US\$ 2019	5,959	5,541	93.0%	3,963	1,996					
			Mio US\$ 2018	6,138	5,709	93.0%	3,911	2,227					
			Mio US\$ 2017	6,048	5,745	95.0%	3,478	2,570					
			Mio Euro/€ 2019	5,323	4,950	93.0%	3,540	1,783					
			Mio Euro/€ 2018	5,195	4,831	93.0%	3,310	1,885					
			Mio Euro/€ 2017	5,352	5,084	95.0%	3,078	2,274					
			Global Footprint	Employees	Regional Sales		Board						
			Total:	2019: 31,575 2018: 31,489		5,323 Mio €	100.0%	Vice Chairman/CEO: Marco Tronchetti Provera ; CFO: Francesco Tanzi ; Technical Operations: Francesco Sala ; Technology and Innovation/Strategic Advisor: Maurizio Boiocchi ; General Manager Operations: Andrea Casaluci ; Annual Reports: https://corporate.pirelli.com/corporate/en-ww/investors/investors Press Releases: https://press.pirelli.com/ Suppliers: http://ebp.pirelli.com:50701/irj/portal					
			Automotive:		n.a.	4,950 Mio €	93.0%						
			Americas:		11,229	1,784 Mio €	34.0%						
North America:		3,265	1,102 Mio €	21.0%									
Central- and South America:		7,964	682 Mio €	13.0%									
Russia and CIS:		3,046	275 Mio €	5.0%									
Middle East, Africa*:		4,143	975 Mio €	18.0%									
Europe:		13,158	2,289 Mio €	43.0%									
Further Information													
Company profile:	Pirelli&C. S.p.a. is the fifth largest producer of tyres in the world in terms of sales. Founded in 1872, today Pirelli counts 19 sites, in four continents, operating through a widespread sales network in over 160 countries around the world and employees over 31,000 people worldwide. After a temporary privatization period by a consortium led by the Chinese state-owned enterprise ChemChina Pirelli returned to the stock market on October 4, 2017, following a reorganisation process which led to the separation of the Industrial business and to the focus on the Consumer business, enriched with new proficiencies also through the creation of new departments and business. Main Automotive Customers: Aston Martin, Bentley, Ferrari, Porsche, Maserati, Lamborghini, McLaren, Alfa Romeo, Audi, BMW, Mercedes, Jaguar and Land Rover.												
Revenue split:	Pirelli is the absolute leader in the Prestige segment with a market share that exceeds 50% for the Original Equipment channel. Car Tyres: approximately 93%, Moto tyres: approximately 7%. Revenues by original equipment: 25%; by replacement: 75%. Pirelli has extended its presence in F1 as the Global Tyre Partner until 2023.												
Sites (production/R&D):	In 2019, Pirelli can count on more than 16,500 Loyal Resellers globally, with a particular concentration in Europe, Asia-Pacific and South America (about 75% of the total points of sale). The Group also boasts a geographically diversified production structure with 19 plants in 12 countries on four continents.												
R&D facts:	Research & Development expenses for 2019 amounted to euro 232.5 million and represented 4.4% of sales, and mainly included expenses destined for High Value activities (euro 215.7 million equal to 6.1% of High Value revenues). The Research and Development department counts over 2,100 personnel (equal to approximately 6.7% of the Group's human resources) between its Milan headquarters and the 12 technology centres located in various geographical regions. In 2018, Pirelli invested 219.0 million euro in research and development (4.1% of revenues). 2017 Pirelli invested 221.5 million euro in research and development (4.1% of revenues). Pirelli can also count on a portfolio of more than 6,100 active patents grouped into 763 families, each on average extended across 8-9 countries.												
Automotive market leader in:	Pirelli currently occupies a leadership position in the Prestige tyres segment, with more than one-third of the global market in terms of volume, and in the radial segment of the after-market for motorcycle tyres. Pirelli is also the leader in Europe, China and Brazil, in the after-markets for New Premium car tyres and Premium motorcycle tyres.												
Main automotive products:	Pirelli currently occupies a leadership position in the Prestige tyres segment, with more than one-third of the global market in terms of volume, and in the radial segment of the after-market for motorcycle tyres. Pirelli is also the leader in Europe, China and Brazil, in the after-markets for New Premium car tyres and Premium motorcycle tyres.												
Main automotive competitors:	Pirelli, Nokian, Bridgestone, Michelin, Continental, Goodyear, Sumitomo, Yokohama, Hankook, Cheng Shin, Cooper, Kumho, Toyo, MRF, Apollo, Nexen, Titan, Brisa, Trelleborg, Petlas and over 150 small producers.												
Sources:	Annual Report, Company Information												
Annotations:	incl. India												
55 ▲ (58)	 DRÄXLMAIER DRÄXLMAIER Group Landshuter Strasse 100 84137 Vilsbiburg Bavaria Germany www.draexlmaier.com FY ended: Dec, 31		Mio US\$ 2019	5,485	5,485	100.0%							
			Mio US\$ 2018	5,436	5,436	100.0%							
			Mio US\$ 2017	4,633	4,633	100.0%							
			Mio Euro/€ 2019	4,900	4,900	100.0%							
			Mio Euro/€ 2018	4,600	4,600	100.0%							
			Mio Euro/€ 2017	4,100	4,100	100.0%							
Global Footprint	Employees	Regional Sales		Board									
Total:	2019: around 75,000 2018: around 70,000		4,900 Mio €	100.0%	Fritz Dräxlmaier: Chairman of the Executive Board; Franz Haslinger: CSO; Dr. Martin Gall: CTO								
Automotive:		70,000	4,900 Mio €	100.0%									
Americas:		n.a.	n.a.	n.a.									
NAFTA/North America:		n.a.	n.a.	n.a.									
South America:		n.a.	n.a.	n.a.									
Asia-Pacific:		n.a.	n.a.	n.a.									
Japan:		n.a.	n.a.	n.a.									
Europe:		n.a.	n.a.	n.a.									
Germany:		n.a.	n.a.	n.a.									
Further Information													
Company profile:	The Dräxlmaier Group supplies premium automobile manufacturers worldwide with complex wiring harness systems, central electrical and electronic components, exclusive interiors, and battery systems for electric mobility. The combination of core competencies in the interior, electrical, electronic and battery systems areas makes Dräxlmaier unique in the industry. The company thereby covers the entire process chain, from the initial idea, through the development and production process, and up to precisely in-sequence delivery of the products to the assembly lines of premium automobile manufacturers. The inventor of the customer-specific wiring harness, the Dräxlmaier Group develops pioneering wiring harness technology as well as electrical and electronic components, all directly in-house. These include multi-voltage and high-voltage wiring harness systems, battery management systems, and intelligent power distributors. Dräxlmaier is working on the future of emission-free mobility with its solution for low-voltage and high-voltage battery systems. As a market leader for interior systems in premium automobiles, the Dräxlmaier Group also supplies premium automobile manufacturers with ambient lighting, center consoles, door panels and instrument panels, as well as complete door and cockpit modules. The Dräxlmaier Group is an international automotive supplier with more than 60 sites in over 20 countries. Founded in Germany in 1958, the company employs around 75,000 employees throughout the world. For the Dräxlmaier Group as an owner-managed business, responsible and long-range thinking has always been the basis for economic success. It is therefore a core element of its strategy to design its business and production processes, as well as its products, in a more sustainable manner and in that way to increase the competitiveness of the company on a long-term basis.												
Sites (production/R&D):	The Dräxlmaier Group is an international automotive supplier with more than 60 sites in over 20 countries.												
Main automotive Customers:	Audi, BMW, Jaguar, Land Rover, Maserati, Mercedes-Benz, MINI, Porsche and VW.												
Main automotive products:	Electrics: Wiring harnesses, modular power distributors, connector systems, contacts; Electronics: Battery management systems, intelligent power distributors, interior and body electronics; Interior: Ambient lighting, consoles, door panels, instrument panels; Battery systems: Low-voltage battery systems, high-voltage battery systems, high-voltage control boxes.												
Main automotive competitors:	Faurecia, IAC, Grammer, SMP, Eissmann Automotive, Reydel, Yanfeng, Grupo Antolin, Megatech, Lear, Leoni, Motherson Sumi Systems, Nexans Autoelectric, Sumitomo Electric, Yazaki, Delphi, Fujikura, Kromberg & Schubert, Hella, Marquardt, Kostal, Webasto, Aptiv, MTA und TE Connectivity												
Sources:	Privately owned, no further information available												
Annotations:													


Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
56 ▲ (60)	 Mitsubishi Electric Corporation Tokyo Building 2-7-3, Marunouchi Chiyoda-ku Tokyo 100-8310 Japan www.mitsubishielectric.com FY ended: March, 31		in figures only:	in figures:	in % of Total Sales:	Energy and Electric Systems	Industrial Automation Systems	Information and Communication Systems	Electronic Devices	Home Appliances	Others and Eliminations	
			Mio US\$ 2019/20	40,935	5,321	13.0%	11,993	12,378	4,179	1,915	10,001	469
			Mio US\$ 2018/19	40,937	5,322	13.0%	11,745	13,292	3,861	1,811	9,728	501
			Mio US\$ 2017/18	39,531	5,139	13.0%	11,179	12,890	3,890	1,805	9,361	213
			Mio Yen/¥2019/20	4,462,509	580,126	13.0%	1,307,389	1,349,429	455,596	208,750	1,090,248	51,097
			Mio Yen/¥2018/19	4,519,921	587,577	13.0%	1,296,745	1,467,633	426,269	199,908	1,074,044	55,322
			Mio Yen/¥2017/18	4,431,198	576,056	13.0%	1,241,952	1,444,928	436,068	202,294	1,049,369	23,900
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2020: 146,518 2019: 145,817	4,462,509 Mio ¥		100.0% Takeshi Sugiyama: President & CEO; Senior Vice Presidents: Yasuyuki Ito, Kei Uruma, Satoshi Matsushita, Hiroshi Onishi, Yoshikazu Miyata, Tadashi Matsumoto; Executive Officers: Masahiro Fujita, Jun Nagasawa, Shinji Harada, Tadashi Kawagoishi, Takakazu Murozono, Koichi Orito, Juichi Shikata, Yoshihisa Hara, Atsuhiko Yabu, Satoshi Kusakabe, Yoji Saito, Hideki Fukushima, Noriyuki Takazawa, Yuzuru Saito							
	Automotive:	n.a.	587,577 Mio ¥		13.0%							
	Americas:	n.a.	432,096 Mio ¥		9.7%							
	NAFTA/North America:	n.a.	432,096 Mio ¥		9.7%							
	South America:	n.a.	n.a.		n.a.							
	Asia-Pacific:	n.a.	3,530,295 Mio ¥		79.1%							
	Japan:	n.a.	2,610,322 Mio ¥		58.5%							
	Europe:	n.a.	437,214 Mio ¥		9.8%							
	Others:	n.a.	62,904 Mio ¥		1.4%							
	Further Information											
	Company profile:	Mitsubishi Electric Corporation is a world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment.										
	Revenue split:	Revenue for fiscal 2020 decreased by 57.4 billion yen from the previous fiscal year to 4,462.5 billion yen. The Mitsubishi Electric Group is involved in the development, manufacture and sales in a wide range of fields including Energy and Electric Systems, Industrial Automation Systems, Information and Communication Systems, Electronic Devices and Home Appliances, and these operations stretch out globally, not only inside Japan, but also in North America, Europe, Asia and other regions. The automotive equipment business saw increases in both orders and revenue from the previous fiscal year due primarily to increases in Japan, Europe and other markets in Asia, as well as increased revenue in electric-vehicle related equipment in response to market growth worldwide.										
	Sites (production/R&D):	With 16 production bases in more than ten countries, Mitsubishi Electric's automotive equipment parts supply system is optimized to every region of the globe. Subsidiaries: 206 companies.										
	R&D facts:	In fiscal 2019/20 total R&D expenditures, including quality improvement expenses constituting manufacturing costs, amounted to ¥ 206.8 billion, 2018/19: ¥ 212.7 billion, 2017/18: ¥ 210.3 billion. 2016/2017: ¥ 201.3 billion.										
	Main automotive Customers:	n.a.										
	Main automotive products:	Charging & starting products, electrification products, electric power steering system products, safety and driving assistance system products, car multimedia products.										
	Main automotive competitors:	E. g. Hitachi, NEC, Toshiba, Tyco Electronics, Siemens.										
	Sources:	Annual Report, Company Information										
	Annotations:	* Estimation, proper company information not available, automotive sales mainly generated by Industrial Automation Systems unit, by Electronic Devices, and partly by the Home Appliances unit.										


Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
57 ▼ (49)	 NSK Group Ltd. Nissei Bldg. 1-6-3 Ohsaki, Shinagawa-Ku Tokyo, 141-8560, Japan www.nsk.com FY ended: March, 31		in figures only:	in figures:	in % of Total Sales:	Automotive business	Industrial machinery business	Automotive Components (part of Automotive business)	Automotive bearings (part of Automotive business)			
			Mio US\$ 2019/20	7,623	5,264	69.0%	5,264	2,123	2,874	2,390		
			Mio US\$ 2018/19	8,979	6,246	69.6%	6,246	2,445	3,086	3,160		
			Mio US\$ 2017/18	9,102	6,455	70.9%	6,455	2,375	3,324	3,131		
			Mio Yen/¥ 2019/20	831,034	573,817	69.0%	573,817	232,470	313,300	260,500		
			Mio Yen/¥ 2018/19	991,365	689,658	69.6%	689,658	269,974	340,750	348,907		
			Mio Yen/¥ 2017/18	1,020,338	723,564	70.9%	723,564	266,249	372,642	350,922		
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 30,747 2018: 31,484	831,034 Mio ¥		100.0% President and Chief Executive Officer: Toshihiro Uchiyama; Senior Executive Vice President: Saimon Nogami (CFO); Executive Vice Presidents: Akitoshi Ichii, Masatada Fumoto, Nobuo Goto, Tomoyuki Yoshikiyo, Hideki Ochiai; Senior Vice Presidents: Hiroya Miyazaki, Kenichi Yamana, Nobuaki Mitamura, Tatsuya Atarashi, Kunihiro Akashi, Masaru Takayama, Keita Suzuki							
	Automotive:	n.a.	573,817 Mio ¥		69.0%							
	Americas:	n.a.	139,249 Mio ¥		16.8%							
	NAFTA/North America:	n.a.	n.a.		n.a.							
	China:	n.a.	148,525 Mio ¥		17.9%							
	Asia-Pacific:	n.a.	581,708 Mio ¥		70.0%							
	Japan:	n.a.	314,281 Mio ¥		37.8%							
	Europe:	n.a.	110,075 Mio ¥		13.2%							
	Germany:	n.a.	n.a.		n.a.							
	Further Information											
	Company profile:	NSK was founded in 1916 and produced the first ball bearings made in Japan. Since then, the company has spearheaded the development of bearings in Japan. NSK now offers a full range of bearings and sells them worldwide. NSK bearings have contributed greatly to the growth of many industries and to the advancement of mechanical technology. Now, the company has the largest share of the bearings market in Japan and is one of the largest bearing suppliers in the world.										
	Revenue split:	NSK has used its expertise in precision machining technology, refined through years of bearing manufacturing, to diversify into automotive and industrial machinery business. In FY 2019/20 Sales in the automotive business totaled 573,814 million Yen, a year-on-year decrease of 16.8%.										
	Sites (production/R&D):	NSK operates 59 locations in Japan and a total of 208 production sites, sales locations, representative offices, and technical service locations in 30 countries and regions around the world.										
	R&D facts:	NSK has 16 R&D center in 9 countries. Research and development expenses in FY 2019/20: 18,265 million Yen, FY 2018/19: 19,023 million Yen and FY 2017/18: 17,059 million Yen.										
	Main automotive Customers:	Major OEMs, suppliers etc.										
	Main automotive products:	Precision machinery and parts and mechatronics products; NSK's automotive components business is composed of three core product groups: steering related products, electric power steering (EPS) systems, and automatic transmission components, steering systems, hub unit bearings, needle roller bearings, other bearings for automotive products, engine parts, electrical accessories, half-toroidal CVT, differential gear & propeller shafts.										
	Main automotive competitors:	NTN, Koyo Seiko (JTEKT), Minebea, Schaeffler Group (INA/FAG), SKF, Timken, Nippon Bearing, RBS Global.										
	Sources:	Company Information										
	Annotations:											


Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:						
58 ▼ (56)	 Freudenberg Group Höhnerweg 2-4 69465 Weinheim Baden-Württemberg Germany www.freudenberg.com FY ended: Dec, 31					Seals and Vibration Control Technology	Technical Textiles and Filtration	Cleaning Technologies and Products	Specialities		
			Mio US\$ 2019	10,598	5,193	49.0%	5,962	2,205	1,093	1,606	
			Mio US\$ 2018	11,173	5,475	49.0%	6,506	2,244	1,100	1,624	
			Mio US\$ 2017	10,562	5,281	50.0%	6,117	2,157	1,060	1,517	
			Mio Euro/€ 2019	9,468	4,639	49.0%	5,326	1,970	976	1,435	
			Mio Euro/€ 2018	9,455	4,633	49.0%	5,506	1,899	931	1,374	
			Mio Euro/€ 2017	9,346	4,673	50.0%	5,413	1,909	938	1,342	
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 48,851 2018: 49,137	9,468 Mio €		Dr. Mohsen Sohi: CEO and Speaker of the Board of Management; Dr. Ralf Krieger: CFO and Member of the Board of Management; Dr. Tilman Krauch: CTO and Member of the Board of Management;						
	Automotive:	n.a.	4,639 Mio €	49.0%							
	Americas:	11,921	2,840 Mio €	30.0%							
	NAFTA/North America:	10,562	2,556 Mio €	27.0%							
	South America:	1,359	284 Mio €	3.0%							
	Asia-Pacific:	10,062	2,083 Mio €	22.0%							
	Other Regions:	n.a.	n.a.	n.a.							
	Europe:	25,499	4,355 Mio €	46.0%							
	Germany:	11,398	1,515 Mio €	16.0%							
	Further Information										
	Company profile:	Freudenberg is a global technology group that strengthens its customers and society long-term through forward-looking innovations. Together with its partners, customers and research institutions, the Freudenberg Group develops leading-edge technologies and excellent products and services for 40 markets and for thousands of applications.									
	Revenue split:	Seals, vibration control technology components, technical textiles, filters, cleaning technologies and products, specialty chemicals and medical technology products.									
	Sites (production/R&D):	More than 500 sites in some 60 countries worldwide									
	R&D facts:	In 2019, Freudenberg conducted research and development activities in the amount of Euro 480.9 million (previous year: Euro 444.3 million). This represents 5.1 percent of sales (previous year: 4.7 percent).									
	Main automotive Customers:	Freudenberg is a partner to all OEM and Tier 2 customers worldwide.									
	Main automotive products:	Anti-vibration components, sealing solutions, technical textiles, specialty lubricants and filters.									
	Sources:	Annual Report, Company Information									
	Annotations:	The figures mentioned above were compiled solely under International Financial Reporting Standards (IFRS) reporting rules, whereby joint ventures were consolidated using the equity method.									


Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:						
59 ▲ (62)	 Mando CO 343-1 Manho-ri Poseung-eup Pyeongtaek-si Gyeonggi-do, 451-821 Korea, Republic of (South) www.mando.com FY ended: Dec, 31										
			Mio US\$ 2019	5,132	5,132	100.0%					
			Mio US\$ 2018	5,153	5,153	100.0%					
			Mio US\$ 2017	5,035	5,035	100.0%					
			Mio KRW 2019	5,981,877	5,981,877	100.0%					
			Mio KRW 2018	5,664,833	5,664,833	100.0%					
			Mio KRW 2017	5,684,705	5,684,705	100.0%					
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 12,437 2018: n.a.	5,981,877 Mio KRW		Inside Directors: Mong-Won Chung CEO, Jae-Young Chung, Kwang-Heon Kim; Outside Directors: Han-Cheol Kim, Kyung-Soo Kim, In-Hyung Lee, Ki-Chan Park						
	Automotive:	12,437	5,981,877 Mio KRW	100.0%							
	Americas:	n.a.	1,196,375 Mio KRW	20.0%							
	NAFTA/North America:	n.a.	n.a.	n.a.							
	China:	n.a.	1,256,194 Mio KRW	22.0%							
	Asia-Pacific:	n.a.	538,369 Mio KRW	9.0%							
	Korea:	n.a.	2,751,664 Mio KRW	46.0%							
	Europe:	n.a.	239,275 Mio KRW	4.0%							
	Others:	n.a.	n.a.	n.a.							
	Further Information										
	Company profile:	The Mando Corporation, located in Seoul, Korea, is the largest global Tier 1 Korean Original equipment manufacturer and supplier to Hyundai Motor Company. Mando was created in 1962. Initially, the company was named Hyundai International Inc. and changed its name to Mando Machinery Corporation in February 1980. It is currently owned and run by the original founding parent company, Halla Group. The Company is headquartered in Pyongtaek in Korea, while its plants and central research center are located in Pyongtaek, Wonju, Iksan and Sungnam in Korea.									
	Revenue split:	Mando has three main areas of business: steering parts, brake parts and suspension parts.									
	Sites (production/R&D):	The Company has domestic and overseas subsidiaries which manufacture, distribute and sell automotive parts. Overall, the corporation has 8 sales and trading offices, 20 factory-sand plants worldwide including China, Turkey, Brazil, India, Japan, Sweden, Germany, Poland, Australia, and Malaysia.									
	R&D facts:	The aggregate amount of research and development expenditures recognized as expenses is KOR 155,531,968 thousand in 2018 (2019: n.a., 2017: 140,769,947 thousand, 2016: KOR 113,571,811 thousand). Mando has 16 R&D centers and 7 vehicle test sites in five countries.									
	Main automotive Customers:	n.a.									
	Main automotive products:	Brake systems, steering systems, driver assistance systems, suspension systems.									
	Main automotive competitors:	Major competitors are Haldex, WABCO, Brembo, Bendix/Knorr Bremse, Nexteer, ZF, TRW and more.									
	Sources:	Annual Report, Company Information									
	Annotations:										


Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Electronic Components	thereof Automotive	thereof Home, Mobile & Industry (HM&I)	Automotive Infotainment	Logistics and Other	
60 ▲ (61)	ALPS Alps Electric Co., Ltd. 1-7, Yukigaya-otsuka-machi, Ota-ku Tokyo, 145-8501 Japan www.alps.com FY ended: March, 31										
			7,435	5,030	67.7%	3,896	2,221	1,675	2,810	730	
			Mio US\$ 2018/19	7,711	5,266	68.3%	4,244	2,517	1,727	2,750	717
			Mio US\$ 2017/18	7,657	4,914	64.2%	4,585	2,526	2,059	2,387	682
				810,570	548,383	67.7%	424,709	242,084	182,625	306,299	79,562
			Mio Yen/¥ 2018/19	851,332	581,476	68.3%	468,605	277,883	190,722	303,593	79,132
			Mio Yen/¥ 2017/18	858,300	550,800	64.2%	514,000	283,200	230,800	267,600	76,500
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: n.a. 2018: 42,289	810,570 Mio ¥		100.0%	President & Representative Director: Toshihiro Kuriyama; Senior Executive Vice President: Nobuhiko Komeya; Directors: Takashi Kimoto, Yasuo Sasao, Koichi Endo; Senior Vice Presidents: Yoji Kawarada, Tetsuhiro Saeki; Vice Presidents: Yoichiro Kega, Hiroyuki Sato, Hideo Izumi, Toshinori Kobayashi, Shinji Inoue, Koji Ishibashi, Yasushi Motokawa, Satoshi Kodaira, Kazutoshi Ogamoto, Hiroshi Yamagami, Yoshikatsu Watanabe					
	Automotive:		n.a.	548,383 Mio ¥	67.7%	Contact: https://www.alpsalpine.com/e/common/inquiry.html Annual Reports: https://www.alpsalpine.com/e/ir/library.html Press Releases: https://www.alpsalpine.com/e/news_release/index.html					
	Americas:		n.a.	133,676 Mio ¥	16.5%						
	NAFTA/North America:		n.a.	133,676 Mio ¥	16.5%						
	South America:		n.a.	n.a.	n.a.						
	Asia-Pacific:		n.a.	309,988 Mio ¥	38.2%						
	Japan:		n.a.	154,466 Mio ¥	19.1%						
	Europe:		n.a.	86,673 Mio ¥	10.7%						
	Others:		n.a.	154,466 Mio ¥	34.6%						
	Further Information										
	Company profile:	Alps Electric is a leading global manufacturer of electronic devices, supplying some 40,000 different components to around 2,000 companies that produce automobiles, home appliances, mobile devices and industrial machinery all over the world. Since its establishment in 1948, Alps Electric Co., Ltd. has been providing various components which are installed into PCs, mobile phones, home appliances, and automobiles.									
	Revenue split:	There are three segments: Automotive Infotainment, Logistics and Other Business and Electronic Components. About 80.0% of Alps' net sales come from products made at overseas bases. Net Sales in automotive market market for the fiscal year ended March 31, 2020 amounted to ¥242.0 billion, a decrease of 12.9% compared to the previous fiscal year. Net sales in the Automotive Infotainment Segment amounted to ¥306.2 billion, an increase of 0.9%.									
	Sites (production/R&D):	The Alps Electric Group has R&D, production and sales bases located in Japan and across the globe—in the Americas, Europe, Southeast Asia, India, Greater China and Korea. It leads a group of 88 companies that also includes Alpine, a provider of mobile media solutions, and Alps Logistics, a provider of integrated logistics services specializing in electronic devices distribution.									
	R&D facts:	R&D Expenses in FY 2019: 37.6 million Yen, FY 2018: 32.8 billion Yen, FY 2017 29.7 billion Yen (2016: 32.2 billion Yen; 2015: 33.3 billion Yen).									
	Main automotive Customers:	Major OEMs, Tier-1 suppliers, consumer/aftermarket.									
	Main automotive products:	Alps electric: Steering Modules, Steering Switches, Clock Spring for Airbag Systems, Door/Seat Modules, Power Mirror Switches, Haptic Commander, Air Conditioner Operation Units, Control Switch Units, Remote Keyless Entry Systems, Passive Keyless Entry Systems; Alpine: Car audio systems, Car AV systems, Car navigation systems.									
	Main automotive competitors:	Garmin Ltd., Aptiv PLC, ELAN Microelectronics Corp., Everspin Technologies, Inc., LightPath Technologies, Inc. Class A, Mildex Optical Inc., Synaptics Incorporated									
	Sources:	Company Information									
	Annotations:										



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Tires	Multiple Business	Alliance Tire Group	Others		
61 ▲ (71)	YOKOHAMA The Yokohama Rubber Co., Ltd. 36-11, Shimbashi 5-chome Minato-ku Tokyo 105-8685 Japan www.yrc.com/global/ FY ended: Dec, 31										
			Mio US\$ 2018	5,967	4,793	80.3%	4,143	1,095	649	79	
			Mio US\$ 2018	5,889	4,119	74.1%	4,119	1,067	622	81	
			Mio US\$ 2017	5,765	4,103	69.7%	4,103	1,018	566	78	
			Mio Yen/¥ 2018	650,462	522,485	80.3%	451,698	119,337	70,787	8,639	
			Mio Yen/¥ 2018	650,239	481,639	74.1%	454,801	117,782	68,689	8,966	
			Mio Yen/¥ 2017	646,279	450,562	69.7%	459,949	114,099	63,433	8,792	
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 27,428 2018: 26,274	650,462 Mio ¥		100.0%	Senior Managing Officer: Shinichi Takimoto; Managing Officers: Hirohisa Hazama, Atao Kishi, Tadaharu Yamamoto, Hitoshi Ikeda					
	Automotive:		n.a.	522,485 Mio ¥	80.3%	Contact: http://www.yokohama.com/cp/global/inquiry/ Annual Report: http://www.yrc.co.jp/cp/global/ir/library/areport/ Press Releases: http://www.yrc.co.jp/release/?lang=en					
	Americas:		n.a.	174,852 Mio ¥	26.9%						
	NAFTA/North America:		n.a.	174,852 Mio ¥	26.9%						
	South America:		n.a.	n.a.	n.a.						
	Asia-Pacific:		n.a.	392,325 Mio ¥	14.2%						
	Japan:		n.a.	270,199 Mio ¥	41.5%						
	Others:		n.a.	113,086 Mio ¥	17.4%						
	Further Information										
	Company profile:	The Yokohama Rubber Co., Ltd., established in 1917, is a leading tire manufacturer. It has also deployed its polymer expertise in several lines of diversified business, including high-pressure hoses, sealants and adhesives, other industrial products, aircraft fixtures and components, and golf equipment. Yokohama is laying a foundation for sustainable growth in tires and in diversified products in Japan and overseas by developing high-functionality products and by expanding its production capacity. In July 2016 Yokohama acquired Alliance Tire Group (ATG), which produces and markets off-highway tires.									
	Revenue split:	The tires segment accounts for about 70% of sales and the Multiple Business (MB) segment about 20%. The Alliance Tire Group (ATG), a maker of off-highway tires acquired in 2016, now accounts for about 10% of group sales.									
	Sites (production/R&D):	Yokohama Rubber has expanded its business around the globe more than 120 countries and now employs about 27,428 people in Japan, Asia, Europe, Russia, North America, Latin America, the Middle East and Africa. Yokohama Rubber now has 35 combined principal manufacturing/sales bases and over 30 principal sales offices.									
	R&D facts:	Research and development expenses charged to manufacturing costs and to selling, general and administrative expenses for the years ended December 31, 2019, 2018, 2017, 2016 and 2015, were ¥15,026, ¥15,169, ¥15,095, ¥14,483, and ¥14,221 million, respectively. Today, Yokohama Rubber has tire R&D centers in Japan (2), Thailand, and Sweden.									
	Main automotive Customers:	Customers around the world, e.g. Audi, Bentley, BMW, Mercedes, Porsche, Toyota/Lexus.									
	Main automotive products:	Tires for passenger cars, trucks and buses, light trucks, mining and construction equipment, industrial vehicles and agricultural and forestry machinery, aluminum alloy wheels and automobile-related components, Conveyor belts, rubber plates, various hoses, marine fenders, oil spill containment booms, marine hoses, rubber molded products, air springs, highway joints, rubber support, water-repellent materials, anti-seismic laminated rubber sheets for buildings, water-proof materials, sound- and vibration-proof materials, adhesives and sealants, Aerospace products, Golf-related products, Information processing services, real estate and others.									
	Main automotive competitors:	Bridgestone, Michelin, Pirelli, Goodyear, Sumitomo, Continental, Cooper, Toyo, Kurah, Hankook and others.									
	Sources:	Company Information									



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates				
62 ▲ (63)	LEONI Leoni AG Marienstr. 7 90402 Nürnberg Bavaria Germany www.leoni.com FY ended: Dec, 31					Wiring Systems	Wire & Cable Solutions			
			Mio US\$ 2019	5,427	4,450	82.0%	3,388	2,035		
			Mio US\$ 2018	6,028	5,003	83.0%	3,744	2,285		
			Mio US\$ 2017	5,563	4,562	82.0%	3,460	2,103		
			Mio Euro/€ 2019	4,848	3,975	82.0%	3,027	1,818		
			Mio Euro/€ 2018	5,101	4,234	83.0%	3,168	1,934		
			Mio Euro/€ 2017	4,923	4,037	82.0%	3,062	1,861		
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2019: 94,928 2018: 92,500		4,848 Mio €	100.0%	Aldo Kamper: President & CEO; Hans-Joachim Ziems: CRO in charge of Restructuring; Ingrid Jägering: CFO and Labour Director; Bruno Fankhauser: in charge of the Wire & Cable Solution Division; Martin Stüttem: Chief Operating Officer of the Wiring Systems Division				
	Automotive:		n.a.	3,975 Mio €	82.0%					
	Americas:		13,000	828 Mio €	17.1%					
	NAFTA/North America:		3,900	n.a.	n.a.					
	Asia:		n.a.	667 Mio €	13.8%					
	Japan:		n.a.	n.a.	n.a.					
	Europe*:		78,000	3,348 Mio €	69.1%					
	therefrom Germany:		n.a.	1,124 Mio €	23.2%					
	Further Information									
	Company profile:	Leoni is a global provider of products, solutions and services for energy and data management in the automotive sector and other industries. The market-listed group of companies has around 95,000 employees in 32 countries and generated consolidated sales of EUR 4.8 billion in 2019. LEONI's largest customer group comprises the global car, commercial vehicle and component supply industry, for which the Company makes both standard and special cables as well as custom-developed wiring systems and related components. Leonifurthermore supplies products and services to these markets: data communication & networks, healthcare, process industry, transportation, energy & infrastructure, factory automation, machinery & sensors as well as marine. An integrated network for research & development, production as well as distribution and service gives customers the assurance of tailor-made support at more than 100 locations around the globe. Leoni operates as a solutions provider with pronounced development and systems expertise.								
	Sites (production/R&D):	The Leoni Group has 72 subsidiaries in 32 countries worldwide. It comprises 99 production facilities and more than a dozen R&D facilities.								
	R&D facts:	The Leoni Group's spending on R&D amounted to € 161 million in 2019 (previous year: € 150 million), which, as in the previous year, equated to a 3 percent proportion of consolidated sales. At the end of the reporting period, 1,861 people (previous year: 2,259), or an unchanged 2 percent of the Group's workforce, worked in R&D. Of that total, 1,565 employees (previous year: 1,844) worked in the Wiring Systems Division and 296 (previous year: 415) in the Wire & Cable Solutions Division.								
	Main automotive Customers:	ABB, BMW, Bosch, Continental, Cummins, Fiat, Geely, GM/Opel, Harley Davidson, Hyundai Jaguar/Land Rover, Johnson Controls, MAN, Mercedes-Benz, PSA Peugeot Citroën, Renault/Nissan, Volvo and VW Group								
	Main automotive products:	Leoni offers its customers, alongside customised cable solutions, increasingly also complete systems in which all the components are perfectly tuned to one another – from the cable itself to the required connectors and mountings. In this connection the company's permanent further development as a supplier and service provider is an important trend. Added to this is a product value chain, unique in the sector, which holds valuable synergistic benefits: It ranges from ultra-thin single wires and optical fibers to copper, fiber and hybrid cables and through to complex wiring systems with integrated electronics.								
	Main automotive competitors:	E.g. Aptiv, Sumitomo und Yazaki								
	Sources:	Annual Report								
	Annotations:	*EMEA (Europe, Middle East, Africa)								



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates				
63 ▲ (64)	Delphi Technologies Delphi Technologies PLC 1 Angel Court 10th Floor London, EC2R 7HJ United Kingdom www.delphi.com FY ended: Dec, 31					Fuel Injection Systems	Powertrain Products	Electrifi- cation & Electronics products	Aftermarket	
			Mio US\$ 2019	4,361	4,361	100.0%	1,590	1,135	795	841
			Mio US\$ 2018	4,858	4,858	100.0%	1,689	1,246	1,049	874
			Mio US\$ 2017	4,849	4,849	100.0%	1,581	1,279	1,042	947
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2918: 21,000 2017: 18,000		4,361 Mio US\$	100.0%	Richard F. Dauch: President and Chief Executive Officer; Vivid Sehgal: Chief Financial Officer; James D. Harrington: Senior Vice President, General Counsel, Secretary and Chief Compliance Officer; Michael J.P. Clarke: Senior Vice President and Chief Human Resources Officer; Kevin J. Quinlan: Senior Vice President & General Manager, Electrification & Electronics				
	Automotive:		n.a.	4,361 Mio US\$	100.0%					
	Americas:		n.a.	1,359 Mio US\$	31.1%					
	NAFTA/North America:		n.a.	1,232 Mio US\$	28.3%					
	South America:		n.a.	127 Mio US\$	2.9%					
	Asia-Pacific:		n.a.	1,049 Mio US\$	24.0%					
	Japan:		n.a.	n.a.	n.a.					
	Europe:		n.a.	1,953 Mio US\$	44.8%					
	Germany:		n.a.	n.a.	n.a.					
	Further Information									
	Company profile:	Delphi Technologies PLC is a leader and pioneer in the development, design and manufacture of vehicle propulsion systems that enable vehicles to drive cleaner, better and further, by optimizing engine performance, increasing vehicle efficiency, reducing emissions, improving driving performance, and supporting their electrification. On December 4, 2017, Delphi Technologies became an independent publicly traded company as a result of the distribution by Delphi Automotive PLC (the "Former Parent") of 100% of the ordinary shares of Delphi Technologies PLC to Delphi Automotive PLC's shareholders (the "Separation"). Following the Separation, Delphi Automotive PLC changed its name to Aptiv PLC ("Aptiv"). Delphi Technologies previously operated substantially as the Former Parent's Powertrain Systems segment.								
	Revenue split:	n.a.								
	Sites (production/R&D):	Headquartered in London, U.K., Delphi Technologies operates technical centers, manufacturing sites and customer support services in 24 countries.								
	R&D facts:	n.a.								
	Main automotive Customers:	Our global customer base includes 23 of the largest light vehicle OEMs, several of the largest commercial vehicle OEMs, and members of all of the global automotive aftermarket trading groups, which include most of the leading aftermarket retailers and wholesale distributors around the world.								
	Main automotive products:	Delphi's product portfolio includes advanced gasoline and diesel fuel injection systems, actuators, valvetrain products, sensors, electronic control modules and power electronics technologies.								
	Main automotive competitors:	n.a.								
	Sources:	Annual Report, Company Information								
	Annotations:									



Rank	Company	Currencies	Total Sales	Automotive Sales*		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:						
64 ▲ (68)	MANN+HUMMEL MANN+HUMMEL GmbH Schwieberdinger Str. 126 71638 Ludwigsburg Baden-Württemberg Germany www.mann-hummel.com FY ended: Dec, 31										
			Mio US\$ 2019	4,716	4,263	90.0%					
			Mio US\$ 2018	4,721	4,532	96.0%					
			Mio US\$ 2017	4,398	3,883	88.2%					
			Mio Euro/€ 2019	4,213	3,808	90.0%					
			Mio Euro/€ 2018	3,995	3,835	96.0%					
			Mio Euro/€ 2017	3,892	3,436	88.2%					
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 22,000 2018: 21,149		4,213 Mio €	100.0%	Kurk Wilks: President and Chief Executive Officer; Emese Weissenbacher: Chief Financial Officer; Nic Zerbst: Chief Operating Officer					
	Automotive:		n.a.	3,808 Mio €	90.0%						
	Americas:		n.a.	n.a.	n.a.						
	NAFTA/North America:		n.a.	n.a.	n.a.						
	South America:		n.a.	n.a.	n.a.						
	Asia-Pacific:		n.a.	n.a.	n.a.						
	Japan:		n.a.	n.a.	n.a.						
	Europe:		n.a.	n.a.	n.a.						
	Germany:		n.a.	n.a.	n.a.						
	Further Information										
	Company profile:	Mann+Hummel is a leading global expert for filtration solutions. The company group with its headquarters in Ludwigsburg, Germany, develops solutions for motor cars, industrial applications, clean air in interior spaces and the sustainable use of water. In 2019 the group achieved sales revenues of roughly 4.2 billion euros. The products manufactured by the group include air cleaner systems, intake manifold systems, liquid filter systems, plastic components, filter media, cabin filters, industrial filters and membrane filters.									
	Revenue split:	n.a.									
	Sites (production/R&D):	More than 80 sites worldwide.									
	R&D facts:	Use of 3.2% of sales revenue in research and development; over 1.100 employees work worldwide in R&D.									
	Main automotive Customers:	Mann+Hummel serves all major automotive original equipment manufacturer.									
	Main automotive products:	The group's product portfolio includes air filter systems, intake manifold systems, liquid filter systems, cabin filters and technical plastic parts, as well as filter elements for vehicle servicing and repair.									
	Main automotive competitors:	Multiple competitors in different markets.									
	Sources:	Annual Report, Homepage, Press Releases									
	Annotations:	*Estimation, Mann+Hummel has not yet published the complete 2019 annual report									



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:						
65 ▲ (68)	LINAMAR Linamar Corporation, Inc. 287 Speedvale Ave., W. Guelph Ontario, N1H 1C5 Canada www.linamar.com FY ended: Dec, 31					Powertrain/ Driveline	Industrial				
			Mio US\$ 2019	5,589	4,247	76.0%	4,247	1,342			
			Mio US\$ 2018	5,881	4,426	75.2%	4,426	1,456			
			Mio US\$ 2017	5,042	4,182	83.0%	4,182	860			
			Mio C\$ 2019	7,417	5,636	76.0%	5,636	1,781			
			Mio C\$ 2018	7,621	5,734	75.2%	5,734	1,886			
			Mio C\$ 2017	6,546	5,430	83.0%	5,430	1,116			
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 27,000 2018: 29,000		7,417 Mio C\$	100.0%	Frank Hasenfratz: Chairman of the Board; Linda Hasenfratz: Chief Executive Officer; Jim Jarrell: President & Chief Operating Officer; Roger Fulton: Executive Vice President – Human Resources, General Counsel & Corporate Secretary; Mark Stoddart: Chief Technology Officer & Executive Vice President - Marketing; Dale Schneider: Chief Financial Officer;					
	Automotive:		n.a.	5,636 Mio C\$	76.0%						
	Americas:		n.a.	4,654 Mio C\$	83.3%						
	NAFTA/North America:		n.a.	n.a.	n.a.						
	Canada:		n.a.	3,883 Mio C\$	69.5%						
	Asia-Pacific:		n.a.	454 Mio C\$	8.1%						
	Europe:		n.a.	2,308 Mio C\$	41.3%						
	Germany:		n.a.	n.a.	n.a.						
	Further Information										
	Company profile:	The Canadian Linamar Corporation is a diversified global manufacturing company of highly engineered products powering vehicles, motion, work and lives. The Company has grouped facilities mainly in four key divisions; ICE, Skyjack, Driveline and Manufacturing. The Company's Powertrain and Driveline segment focused divisions are world leaders in the collaborative design, development and manufacture of precision metallic components, modules and systems for global vehicle and power generation markets.									
	Revenue split:	The company reports its results of operations in two business segments: Powertrain/Driveline and Industrial which are further divided into 5 operating groups – Skyjack, Agriculture, Machining & Assembly, Light Metal Casting and Forging. The 2019 sales for Transportation decreased by \$98.3 million, or 1.7% compared with 2018. Nearly 20% of wins were for electrified vehicles, even though EV's are only a little over 2% of the market today. 40% of new business won in 2019 was for operations outside of North America.									
	Sites (production/R&D):	The Company conducts its operations in four geographic regions, Canada, the United States, Asia Pacific and Europe with more than 27,000 employees in 61 manufacturing locations and 25 sales offices in 17 countries in North and South America, Europe and Asia which generated sales of \$7.4 billion in 2019.									
	R&D facts:	10 R&D centres.									
	Main automotive Customers:	The principal customers for the Powertrain/Driveline Segment are OEMs with operations in North America and their suppliers. The Company's three largest customers account for 23.6%, 12.8% and 6.6% of total revenue (2018 – 23.3%, 10.7% and 6.7%). In the auto business content per vehicle (CPV) has hit new highs in 2019 in both North America and Europe despite volatile markets. Linamar reached a new record of global CPV at nearly \$60.									
	Main automotive products:	Precision-metallic components for light vehicle and heavy duty engines, cylinder blocks, cylinder heads, precision-metallic components for vehicle transmission and driveline systems. McLaren Performance Technologies: Product conception & development, prototyping, system and component testing for DV and PV program phases, VE/VA, program management, evaluation of new technologies and warranty analysis.									
	Main automotive competitors:	The company faces numerous sources of competition, including its OEM customers and their affiliated parts manufacturers, other direct competitors and product alternatives. In many product areas, the primary competition comes from in-house divisions of the OEMs. Other suppliers as Conti, Magna, Delphi, ZF, Valeo, Toyota Boshoku, Magneti Marelli, Cummins, Federal-Mogul, Toyoda Gosei, Eaton, AsahiTec, and Schaeffler.									
	Sources:	Annual Report									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates
66 ▲ (74)	 Futaba Industrial Co. Ltd. 1 Ochaya, Aza Hashime-cho Okazaki Aichi Prefecture 444-8558 Japan www.futabasangyo.com FY ended: March, 31		in figures only:	in figures: in % of Total Sales:	Automobile Components and Parts Others
			Mio US\$ 2019/20	4,368 4,224*	96.7% 4,224 144
			Mio US\$ 2018/19	4,182 4,044	96.7% 4,044 138
			Mio US\$ 2017/18	3,929 3,800	96.7% 3,800 130
			Mio Yen/¥ 2019/20	476,165 460,452*	96.7% 460,452 15,713
			Mio Yen/¥ 2018/19	461,705 446,469	96.7% 446,469 14,236
			Mio Yen/¥ 2017/18	440,446 425,911	96.7% 435,991 14,535
	Global Footprint	Employees	Regional Sales		Board
	Total:	2020: n.a. 2019: n.a.	476,165 Mio ¥	100.0%	Senior Managing Executive Officer: Jun Wakabayashi; Managing Executive Officers: Keita Asakawa, Yoshito Yamada, Takahisa Inagaki; Executive Officers: Norimasa Shinoda, Takashi Fujii, Shinichi Ogiso, Tateo Kawabuchi, Kenichi Nakao, Uichi Maeda, Kazuhiro Seki, Isao Goto
	Automotive:	n.a.	460,452 Mio ¥	96.7%	Annual Reports: http://www.futabasangyo.com/en/ir Press Releases: https://www.futabasangyo.com/en/news/ Suppliers Contact: https://www.futabasangyo.com/en/contact/
	Americas:	n.a.	99,745 Mio ¥	20.9%	
	NAFTA/North America:	n.a.	99,745 Mio ¥	20.9%	
	South America:	n.a.	n.a.	n.a.	
	Asia:	n.a.	347,233 Mio ¥	72.9%	
	Japan:	n.a.	248,347 Mio ¥	52.2%	
	Europe:	n.a.	29,185 Mio ¥	6.1%	
	Germany:	n.a.	n.a.	n.a.	
	Further Information				
	Company profile:	Ever since its establishment in 1945 under the corporate policy of producing „quality products at lower cost“, Futaba Industrial Co., Ltd. has conducted business prioritizing to provide its customers with products that satisfy their needs by fully utilizing stamping and welding technology. Futaba began producing automotive components and parts in 1948.			
	Revenue split:	Net sales increased 3.1% from the previous fiscal year to 476.1 billion yen. Geographic segment performance was as follows. Japan: Sales decreased 0.7% to 264.2 billion yen, down 1.9 billion yen and operating profit increased 89.7% to 5.1 billion yen. North America: Sales decreased 4.5% to 100.4 billion yen, down 4.7 billion yen and operating profit decreased 31.6% to 1.5 billion yen. Europe: Sales decreased 12.4% to 29.2 billion yen, down 4.1 billion yen and there was operating profit of 0.7 billion yen compared with operating loss of 0.9 billion yen one year earlier. Asia: Sales increased 27.4% to 99.1 billion yen, up 21.3 billion yen and operating profit was up 14.6% to 3.3 billion yen.			
	Sites (production/R&D):	7 plants and research facilities in Aichi Prefecture, Japan, 4 domestic Subsidiaries, 18 Subsidiaries and 2 Affiliated Companies worldwide.			
	R&D facts:	n.a.			
	Main automotive Customers:	Toyota Motor Corporation, Mitsubishi Motor Corporation, Honda Motor Co. Ltd., Daihatsu Motor Co. Ltd., Suzuki Motor Corporation, Nissan Motor Co. Ltd., Hino Motor Co. Ltd., Fuji Xerox Co. Ltd., Mitsubishi Fuso Truck and Bus Corporation.			
	Main automotive products:	Automotive parts, information environment equipment, equipment for external sales, agricultural business. Automotive part: Mufflers, Exhaust Manifolds, Body Pillars, Side Members, Suspension, In-Panelling Hose, Cowl Tops, Seat Frames, Control Arms, Fuel Tanks, Canisters, etc.			
	Main automotive competitors:	E.g. Aisin Seiki, Faurecia, ArvinMeritor, Tenneco Automotive, Sango, Bosal, Calsonic Kansei, Magneti Marelli, Benteler, partly Honeywell, Kolbenschmidt Pierburg, Eberspächer, AsahiTec/Metaldyne, Mitsui.			
	Sources:	Company Information			
	Annotations:	* estimated, reportable segments changed to geographic segments. Japan, North America, Europe and Asia. Each reportable segment is engaged in the manufacture and sale of parts for automobiles and other motor vehicles.			



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates
67 ▲ (75)	 NXP Semiconductors Netherlands B.V. High Tech Campus 60 5656 AG Eindhoven The Netherlands www.nxp.com FY ended: Dec, 31		in figures only:	in figures: In % of Total Sales:	Automotive Industrial & IoT Mobile Communication Infrastructure & Other
			Mio US\$ 2019	8,877 4,212	47.4% 4,212 1,599 1,191 1,875
			Mio US\$ 2018	9,407 3,953	42.0% n.a. n.a. n.a. n.a.
			Mio US\$ 2017	9,256 3,762	40.6% n.a. n.a. n.a. n.a.
	Global Footprint	Employees	Regional Sales		Board
	Total:	2019: 27,700 2018: 30,000	8,877 Mio US\$	100.0%	Kurt Sievers : President & CEO; Peter Kelly : CFO; Henri Ardevol : Executive vice president and general manager of the Automotive business; Chris Jensen : Executive vice president and Chief human resources officer;
	Automotive:	n.a.	4,212 Mio US\$	47.4%	Contact: https://www.nxp.com/about/about-nxp/contact-us/CONTACTUS Press Releases: https://media.nxp.com/ Annual Report: https://investors.nxp.com/
	Americas:	5,540	1,076 Mio US\$	12.1%	
	EMEA**:	5,540	1,760 Mio US\$	19.8%	
	Netherlands:	n.a.	n.a.	n.a.	
	Asia-Pacific:	9,720	n.a.	n.a.	
	Greater China*:	6,925	4,934 Mio US\$	55.6%	
	Japan:	n.a.	780 Mio US\$	8.8%	
	South Korea:	n.a.	327 Mio US\$	3.7%	
	Further Information				
	Company profile:	NXP Semiconductors N.V. (NASDAQ: NXPI) creates solutions that enable secure connections for a smarter world. Building on its expertise in high-performance mixedsignal electronics, NXP is driving innovation in the areas of connected cars, cyber security, portables & wearables, and the Internet of Things.			
	Revenue split:	see above			
	Sites (production/R&D):	More than 100 facilities in more than 30 countries.			
	R&D-facts:	The 2019 research and development expenses, excluding amortization of acquisition related intangible assets, amounted to \$1,321 million (2018: \$1,209 million).			
	Main automotive Customers:	Largest OEM Customers are Apple, Bosch, Continental, Ericsson, Gemalto, Giesecke and Devrient, Huawei, Hyundai, Kona, Nokia Networks, Panasonic, Samsung and ZTE. Avnet accounted for 14% of revenue in 2018, 15% in 2017 and 13% in 2016. Arrow accounted for 10% of our revenue in 2018 and less than 10% of our revenue in 2017 and 2016. No other distributor accounted for greater than 10% of our revenue.			
	Main automotive products:	Key applications: Car access & immobilizers, in vehicle networking, car entertainment, ADAS, Telematics, ABS, Transmission/ throttle control, Automotive Lighting, Gateways, Battery Management, Sensors.			
	Main automotive competitors:	Key competitors in alphabetical order include Analog Devices Inc., Broadcom, Infineon, Intel, Marvell, Maxim Integrated Products, Microchip, Renesas, Power Integrations, Silicon Laboratories, STMicroelectronics and Texas Instruments.			
	Sources:	Annual Report, Website			
	Annotations:	* including Asia Pacific ** Europe, the Middle East and Africa			



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates								
68 ▲ (69)	 Tokai Rika Co., Ltd. 3-260 Toyota Oguchi-cho Niwa-gun Aichi 480-0195 Japan www.tokai-rika.co.jp FY ended: March, 31		in figures only:	in figures:	in % of Total Sales:	Automotive parts	General electrical parts and other business							
			Mio US\$ 2019/20	4,587	4,201*	91.6%	4,201	385						
			Mio US\$ 2018/19	4,598	4,202	91.4%	4,202	396						
			Mio US\$ 2017/18	4,299	3,962	92.1%	3,962	338						
			Mio Yen/¥ 2019/20	500,002	458,002*	91.6%	458,002	42,000						
			Mio Yen/¥ 2018/19	507,645	463,896	91.4%	463,896	43,749						
			Mio Yen/¥ 2017/18	481,945	444,081	92.1%	444,081	37,864						
			Global Footprint	Employees	Regional Sales		Board							
			Total:	2020: 19,452 2019: 19,390			President: Kenji Miura; Executive Vice Presidents: Koki Sato, Kazuhiko Noguchi, Hiroyoshi Ninoyu; Corporate Officers: Yoshihiro Tanaka, Hideki Ono, Shigeru Hayashi, Kazuhiro Ikai, Toshiki Nogami, Toshiki Akita, Koki Imaeda, Hiroshi Nishida, Yoshihiro Kondo, Masahiko Sato, Taketoshi Sakurai Contact: https://www.tokai-rika.co.jp/en/inquiry/form/contact/ Annual Reports: http://www.tokai-rika.co.jp/en/investors/index.html#anc2 Press Releases: http://www.tokai-rika.co.jp/en/news/index.html							
			Automotive:	n.a.	458,002 Mio ¥	91.6%								
Americas:	n.a.	101,708 Mio ¥	20.3%											
NAFTA/North America:	n.a.	101,708 Mio ¥	20.3%											
South America:	n.a.	n.a.	n.a.											
Asia-Pacific:	n.a.	367,722 Mio ¥	73.5%											
therefrom Japan:	n.a.	254,864 Mio ¥	51.0%											
Europe:	n.a.	n.a.	n.a.											
Others:	n.a.	30,570 Mio ¥	6.1%											
			101,708 Mio ¥											
Further Information														
Company profile:	Tokai Rika, established 1948 near Nagoya, is a maker of automotive seat belts and other components. Other products include airbag systems, door mirrors, switches, and wheel covers.													
Revenue split:	n.a.													
Sites (production/R&D):	Consolidated subsidiaries: 39, affiliates: 6.													
R&D facts:	Expenses for R&D in FY 2019/20: 28,119 million Yen, FY 2018/19: 25,856 million Yen, FY 2017/18: 25,398 million Yen, FY 2016/17: 25,669 million Yen.													
Main automotive Customers:	Toyota (74%), Suzuki, Isuzu, Denso, Ford, Daihatsu, Mitsubishi, SUBARU, Toyota, General Motors, Hino Motors, Mazda, Nissan, Toyoda Gosei, Volvo.													
Main automotive products:	Automotive Switches, Locks and Keys, Seatbelts, Shift Levers, Electronic Parts, Steering Wheels, Connectors, Mirrors, Plastic Wheel Covers, Ornaments.													
Main automotive competitors:	Atiwe, Autoliv, Bosch, Dalphi Metal Espana S.A., Delphi, Key Automotive, Neaton Auto Products Manufacturing, Nihon Plast, Continental, Takata, Toyoda Gosei, TRW Automotive.													
Sources:	Company Information													
Annotations:	*Estimations													



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates								
69 ▲ (73)	 Webasto SE Kraillinger Straße 5 82131 Stockdorf Bavaria Germany www.webasto-group.com FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Roof Systems	Heating and Cooling	Batteries & Charging Solutions						
			Mio US\$ 2019	4,142	4,142	100.0%	3,470	644	48					
			Mio US\$ 2018	4,057	4,057	100.0%	n.a.	n.a.	n.a.					
			Mio US\$ 2017	3,969	3,969	100.0%	n.a.	n.a.	n.a.					
			Mio Euro/€ 2019	3,700	3,700	100.0%	3,100	575	43					
			Mio Euro/€ 2018	3,433	3,433	100.0%	n.a.	n.a.	n.a.					
			Mio Euro/€ 2017	3,512	3,512	100.0%	n.a.	n.a.	n.a.					
			Global Footprint	Employees	Regional Sales		Board							
			Total:	2019: 13,954 2018: 13,435			Dr. Holger Engelmann: Chairman of the Management Board Webasto SE; Matthias Arleth: Deputy Chairman of the Management Board Webasto SE; Freddy Geeraerds: Member of the Management Board Webasto SE; Arne Kolfenbach: Member of the Management Board Webasto SE (CFO); Contact: https://www.webasto-group.com/en/contact/ Press Releases: https://www.webasto-group.com/en/press/press-releases/							
			Automotive:	n.a.	3,700 Mio €	100.0%								
Americas:	n.a.	666 Mio €	18.0%											
NAFTA/North America:	n.a.	n.a.	n.a.											
South America:	n.a.	n.a.	n.a.											
Asia-Pacific:	n.a.	1,702 Mio €	46.0%											
therefrom China:	n.a.	1,295 Mio €	35.0%											
Europe:	n.a.	1,332 Mio €	36.0%											
Germany:	n.a.	518 Mio €	14.0%											
Further Information														
Company profile:	The Webasto Group is a global innovative systems partner to almost all automobile manufacturers and among the top 100 suppliers in this industry sector. The company's product portfolio comprises a broad range of roof and heating systems for every type of vehicle and all drive types as well as battery systems and charging solutions. Moreover, Webasto has a strong position in the aftermarket providing dealers and end customers with customized solutions and services relating to thermo management and electromobility. In 2018 the company generated sales of 3.7 billion euros and had over 14,000 employees at more than 50 locations (with over 30 of these being manufacturing plants). The headquarters of the company, founded in 1901, is located in Stockdorf near Munich (Germany).													
Revenue split:	Roof & Components: 82%; Energy & Components: 8%; Customized Solutions: 10%.													
Sites (production/R&D):	Webasto maintains more than 50 locations worldwide—with 30 of these being manufacturing plants.													
R&D facts:	Around 8.5% of sales was invested in R&D 2019;													
Main automotive Customers:	amongst others: VW Group, Daimler Group, Hyundai/Kia, Renault/Nissan, Ford Group, Fiat Group, General Motors, BMW Group, Tata, Greet Wall Motors													
Main automotive products:	Extensive product portfolio for sunroofs, panorama roofs, folding roofs, solar roofs and roofs in lightweight construction; Broadest range of convertible roofs (softtops and retractable hard tops); Innovative heating concepts for all types of drive systems (amongst others: high-voltage heaters for hybrid and electric vehicles), charging solutions and battery systems.													
Main automotive competitors:	Aisin, Eberspächer, Inalfa, Inteva, Yachiyo													
Sources:	Company Information													
Annotations:														



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
70 ▼ (65)	 Nemak (TENEDORA NEMAK, S.A. de C.V.) Libramiento Arco Vial Km. 3.08 Villa de García N.L. México www.nemak.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:					
			Mio US\$ 2019	4,019	4,019	100.0%				
			Mio US\$ 2018	4,700	4,700	100.0%				
			Mio US\$ 2017	4,489	4,489	100.0%				
			Mio MXN 2019	77,363	77,363	100%				
			Mio MXN 2018	90,327	90,327	100.0%				
			Mio MXN 2017	84,799	84,799	100.0%				
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2019: 23,000 2018: 22,000		77,363 Mio MXN	100.0%	Armando Tamez: CEO; Knut Bentin: Mexico Business Unit Director; Klaus Lellig: Europe Business Unit Director; Luis Manuel Peña: USA, Canada & South America Business Unit Director; Ernesto Saenz: Asia Business Unit Director; Josef Nueschen: Structural and Electric Vehicle Components Director; Marc Winterhalter: Vice President of Product Development, Manufacturing and Purchasing Contact: https://www.nemak.com/contact-us Annual Reports: https://investors.nemak.com/ Press releases: https://investors.nemak.com/news-releases Alfa: http://www.alfa.com.mx/				
	Automotive:		22,000	77,363 Mio MXN	100.0%					
	Americas:		n.a.	n.a.	n.a.					
	NAFTA/North America:		n.a.	42,573 Mio MXN	55.0%					
	South America:		n.a.	n.a.	n.a.					
	Asia-Pacific:		n.a.	n.a.	n.a.					
	Japan:		n.a.	n.a.	n.a.					
	Europe:		n.a.	27,586 Mio MXN	37.7%					
	Others:		n.a.	7,204 Mio MXN	9.3%					
	Further Information									
	Company profile:	Nemak is part of the Mexican conglomerate Alfa, a company comprising four business groups: Alpek (petrochemicals), nemak (high-tech aluminum auto components), Sigma (refrigerated food) and Alestra (telecommunications).								
	Revenue split:	Total Revenues amounted to MXN 77,362 million in 2019, MXN 90,327 million in 2018, up 5% from the MXN 84,779 million in 2017. Nemak revenue breakdown by region: north America 55%; Europe 36%.								
	Sites (production/R&D):	Total Revenues amounted to MXN 77,362 million in 2019, MXN 90,327 million in 2018, up 5% from the MXN 84,779 million in 2017. Nemak revenue breakdown by region: north America 55%; Europe 36%.								
	R&D facts:	Research expenses incurred and recorded in the 2018 and 2017 consolidated statements of income were MEX 16 and MEX 6, respectively.								
	Main automotive Customers:	Nemak serves more than 40 customers in the Americas, Europe and Asia, e.g. Ford (24%), General Motors (14%), FCA (13%), VW Group (12%), BMW (6%), Hyundai-Kia (3%), Jaguar Land Rover (3%), Nissan (3%), Renault (2%), Others (14%).								
	Main automotive products:	Nemak produces components for more than 600 platforms (engines): Cylinder Head conveys air and gasoline to the combustion chamber, Engine Block transforms the energy created in the combustion chamber into mechanical power, Transmission parts, E-Motor Housings, Battery Housings and others. Nemak is the world's largest independent producer of cylinder heads and engine blocks.								
	Main automotive competitors:	E.g. Alcoa, Alcan, Halberg, Honsel, Federal Mogul, GKN, Kolbenschmidt, TRW, Eaton, Georg Fischer, KSM Castings, Brabant Alucast.								
	Sources:	Annual Report, Company Information								
	Annotations:									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
71 ▼ (67)	 NTN Corporation 1-3-17, Kyomachibori Nishi-ku Osaka-shi Osaka 550-0003 Japan www.ntn.co.jp FY ended: March, 31		in figures only:	in figures:	In % of Total Sales:	Automotive applications	Industrial machinery applications	Repairmarket		
			Mio US\$ 2019/20	5,976	4,009	67.1%	4,009	964	1,004	
			Mio US\$ 2018/19	6,644	4,450	67.0%	4,450	1,118	1,076	
			Mio US\$ 2017/18	6,641	4,537	68.3%	4,537	1,062	1,041	
			Mio Yen/¥2019/20	651,495	437,006	67.1%	437,006	105,071	109,416	
			Mio Yen/¥2018/19	733,569	491,322	67.0%	491,322	123,397	118,849	
			Mio Yen/¥2017/18	744,372	508,592	68.3%	508,592	119,085	116,695	
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2020: 25,000 2019: 24,988		651,495 Mio ¥	100.0%	President/CEO: Hiroshi Ohkubo; Senior Managing Exec. Officers: Itsuji Goto, Hideaki Miyazawa, Kazuyuki Kawashima; Managing Executive Officers: Toshinori Shiratori, Hidefumi Tsuji, Takehiko Umemoto, Masaki Egami Executive Officers: Koji Kamedaka, Isao Osaka, Tetsuya Sogo, Masaaki Yamamoto Annual Reports: https://www.ntnglobal.com/en/investors/index.html Press Releases: https://www.ntnglobal.com/en/news/press/index.html				
	Automotive:		n.a.	437,006 Mio ¥	67.1%					
	Americas:		n.a.	174,308 Mio ¥	26.8%					
	NAFTA/North America:		n.a.	n.a.	n.a.					
	South America:		n.a.	n.a.	n.a.					
	Asia-Pacific and Others:		n.a.	336,347 Mio ¥	51.6%					
	therefrom Japan:		n.a.	197,995 Mio ¥	30.4%					
	Europe:		n.a.	140,839 Mio ¥	21.6%					
	Germany:		n.a.	n.a.	n.a.					
	Further Information									
	Company profile:	Established in 1918, NTN's main business today is the manufacturing and sale of bearings, constant-velocity joints and precision equipment for automotive applications, industrial machinery applications and the aftermarket. Headquartered in Osaka, Japan, NTN employs about 25,000 employees working in 220 business locations in 33 countries with sales, engineering, production and service networks throughout Japan, the Americas, Europe, Asia and China.								
	Revenue split:	Established in 1918, NTN's main business today is the manufacturing and sale of bearings, constant-velocity joints and precision equipment for automotive applications, industrial machinery applications and the aftermarket. Headquartered in Osaka, Japan, NTN employs about 25,000 employees working in 220 business locations in 33 countries with sales, engineering, production and service networks throughout Japan, the Americas, Europe, Asia and China.								
	Sites (production/R&D):	The NTN Group consists of NTN Corporation, 74 subsidiaries, and 15 affiliated companies (as of March 31, 2019).								
	R&D facts:	NTN has 4 R&D bases worldwide. Research and development costs included in cost of sales and selling, general and administrative expenses totalled ¥19,961, ¥21,661, ¥21,007, ¥19,196, and ¥18,480 for the years ended March 31, 2020, 2019, 2018, 2017 and 2016, respectively.								
	Main automotive products:	The main business is the manufacturing and sale of bearings, driveshafts and precision equipment for aftermarket applications, industrial machinery applications, and automotive applications.								
	Main automotive competitors:	E.g. Schaeffler Group (INA/FAG), JTEKT (former Koyo), Minebea, Nippon Bearing, NSK, SKF, Timken, RBS Globa.								
	Sources:	Company Information								
	Annotations:									



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
74 ▲ (78)	 Infineon Technologies AG Am Campeon 1-12 85579 Neubiberg Bavaria Germany www.infineon.com FY ended: Sept, 30					Industrial Power Control	Power Management & Multimarket	Digital Security Solutions	Other Operating Segments			
			Mio US\$ 2019	8,988	3,921	44.0%	1,750	2,737	719	24		
			Mio US\$ 2018	8,980	3,881	43.2%	1,563	2,739	785	12		
			Mio US\$ 2017	7,982	3,378	42.3%	1,363	2,427	800	10		
			Mio Euro/€ 2019	8,029	3,503	44.0%	1,418	2,445	642	21		
			Mio Euro/€ 2018	7,599	3,284	43.2%	1,323	2,318	664	10		
			Mio Euro/€ 2017	7,063	2,989	42.3%	1,206	2,148	708	9		
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 47,400 2018: 40,098	8,029 Mio €		100.0%		Dr. Reinhard Ploss: CEO; Dominik Asam: CFO; Dr. Sven Schneider: Chief Marketing Officer; Jochen Hanebeck: Chief Operations Officer;					
	Automotive:		n.a.	3,503 Mio €	44.0%	Contact: https://www.infineon.com/cms/en/about-infineon/company/contacts/ Annual Reports: https://www.infineon.com/cms/en/about-infineon/investor/reporting/annual-report/ Press Releases: https://www.infineon.com/cms/en/about-infineon/press/press-releases/						
	Americas:		5,700	1,050 Mio €	13.0%							
	NAFTA/North America:		n.a.	719 Mio €	9.5%							
	Japan:		n.a.	593 Mio €	7.0%							
	Asia-Pacific:		22,700	3,956 Mio €	50.0%							
	Greater China:		n.a.	2,769 Mio €	35.0%							
	Europe*:		19,000	2,430 Mio €	30.0%							
	therefrom Germany:		n.a.	1,169 Mio €	15.0%							
	Further Information											
	Company profile:	Infineon Technologies AG is a world leader in semiconductor solutions and one of the few semiconductor manufacturers for automotive applications that covers the most important applications in vehicles. With a broad product portfolio of microcontrollers, intelligent sensors, transmit and receive ICs for radio-frequency applications and radar as well as both discrete and integrated power semiconductors: powertrain, chassis and comfort electronics as well as driving safety applications.										
	Revenue split:	see above										
	Sites (production/R&D):	37 R&D locations in 16 countries, 17 manufacturing locations in 10 countries.										
	R&D-facts:	At the end of 2019 fiscal year we employed 7,755 people (19 percent of Infineon's total workforce at our research and development Sites (2018: 7,161/18 percent). Infineon maintains R&D-departments at 37 sites in 16 countries. R&D expenses 2019: 945 Mio € 11.8 percentage of revenue.										
	Main automotive Customers:	Aptiv, Autoliv, Bosch, BYD, Continental, Delphi, Denso, Hella, Hitachi, Hyundai, Keihin, Lear, Mando, Mitsubishi Electric, Omron, Preh, Valeo, Veoneer, ZF.										
	Main automotive products:	32-bit automotive microcontrollers for powertrain, assistance and safety systems, comfort electronics and security systems.										
	Main automotive competitors:	Such as NXP, Renesas, TI, STMicro, Bosch, ON Semi, Rohm, Toshiba, ADI										
	Sources:	Annual Report, Company Information										
	Annotations:	*incl. Middle East and Africa										



Rank	Company	Currencies	Total Sales in figures only:	Automotive Sales in figures*:	in % of Total Sales:	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
75 ▼ (70)	 Illinois Tool Works Inc. 3600 West Lake Avenue Glenview Illinois 60026 - USA www.itw.com FY ended: Dec, 31					Automotive OEM	Specialty Products	Food Equipment	Test & Measurement and Electronics	Construction Products	Others	
			Mio US\$ 2019	14,109	3,911	27.7%	3,063	1,825	2,188	2,121	1,625	3,287
			Mio US\$ 2018	14,768	4,181	28.3%	3,338	1,951	2,214	2,171	1,700	3,394
			Mio US\$ 2017	14,314	4,140	28.9%	3,271	1,938	2,123	2,069	1,672	3,241
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 45,000 2018: 48,000	14,109 Mio US\$		100.0%		E. Scott Santi: Chairman & Chief Executive Officer; Norman D. Finch Jr.: Senior Vice President; Michael M. Larsen: Senior Vice President & CFO; Mary K. Lawler: Senior Vice President & Chief Human Resources Officer;					
	Automotive:		n.a.	3,911 Mio US\$	27.7%	Press Releases: https://investor.itw.com/news Annual Reports: https://investor.itw.com/						
	Americas:		n.a.	7,789 Mio US\$	55.2%							
	NAFTA/North America:		n.a.	7,479 Mio US\$	53.0%							
	South America:		n.a.	310 Mio US\$	2.2%							
	Asia-Pacific:		n.a.	2,400 Mio US\$	17.0%							
	Japan:		n.a.	n.a.	n.a.							
	Europe**:		n.a.	3,920 Mio US\$	27.8%							
	Germany:		n.a.	n.a.	n.a.							
	Further Information											
	Company profile:	Illinois Tool Works Inc. was founded in 1912 and incorporated in 1915. The Company is a global manufacturer of a diversified range of industrial products and equipment with 84 divisions in 53 countries. As of December 31, 2019, the Company employed approximately 45,000 people.										
	Revenue split:	Businesses in the segment Automotive OEM produce components and fasteners for automotive-related applications. The operations serve such end markets as automotive OEM/tiers, automotive aftermarket, general industrial, commercial food equipment, construction, and others on a worldwide basis. The Automotive OEM segment is a global niche supplier to top tier OEMs, providing unique innovation to address pain points for sophisticated customers with complex problems. Businesses in this segment produce components and fasteners for automotive-related applications. This segment primarily serves the automotive original equipment manufacturers and tiers market. Over 50% of the Company's net sales are derived from customers outside the United States, and the Company currently operates in 53 countries. Businesses are organized into eight reporting segments: Automotive OEM, Test & Measurement and Electronics, Food Equipment, Construction Products, Polymers and Fluids, Decorative Surfaces and all other ITW products serving industrial, consumer, and electronic end markets.										
	Sites (production/R&D):	The Company's international operations include subsidiaries and joint ventures in 53 foreign countries on six continents. As of December 31, 2019, the Company operated approximately 440 plants and office facilities, approximately 280 of the facilities were located outside of the United States.										
	R&D facts:	Research and development costs were \$221 million, \$233 million and \$225 million for the years ended December 31, 2019, 2018 and 2017, respectively. The Company owns approximately 3,600 unexpired U.S. patents and 8,700 foreign patents covering articles, methods and machines.										
	Main automotive products:	Automotive OEM: Plastic components; metal and plastic fasteners; chemical fluids which clean or add lubrication to machines and automobiles; wheel balancing and tire uniformity equipment used in the automotive industry; automotive aftermarket maintenance and appearance products. Polymers and Fluids: Components, fasteners, fluids, and polymers for transportation-related applications. Primary Products: Metal and plastic components and assemblies for automobiles and trucks, Metal and plastic fasteners for automobiles and trucks, Fluids and polymers for maintenance and appearance, Fillers and putties for auto body repair.										
	Main automotive competitors:	E.g. Acument, EJOT, Böllhoff, Stabill, Voss, Knipping, Arnold Shinjo, Kamax. The Company's competitors include many regional or specialized companies, as well as large U.S. and non-U.S. companies or divisions of large companies.										
	Sources:	Annual Report										
	Annotations:	* Automotive OEM, Polymers & Fluids (42%), Test & Measurement and Electronics (7%); ** Europe, Middle East and Africa										



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
76 ▲ (0)	 CIE Automotive S.A. Alameda Mazarredo 69, 8º 48009 Bilbao (Vizcaya) España www.cieautomotive.com FY ended: Dec, 31		in figures only:	in figures: in % of Total Sales:	Building Efficiency Power Solutions							
			Mio US\$ 2019	3,874	3,874	100,0%						
			Mio US\$ 2018	3,580	3,580	100,0%						
			Mio US\$ 2017	3,216	3,216	100,0%						
			Mio Euro/€ 2019	3,461	3,461	100,0%						
			Mio Euro/€ 2018	3,030	3,030	100,0%						
			Mio Euro/€ 2017	2,846	2,846	100,0%						
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 28,124 2018: 23,262		3,461 Mio €	100.0%	Antonio María Pradera Jáuregui: Chairman; Goizalde Egaña Garitagoitia: Vice Chairwoman; Jesús María Herrera Barandiaran: Chief Executive Officer; Directors: Ángel Ochoa Crespo, Carlos Solchaga Catalán, Francisco José Riberas Mera, Juan María Riberas Mera, Fermín del Río Sanz de Acedo, Shriprakash Shukla, Vankipuram Parthasarathy, Santos Martínez-Conde, Gutiérrez Barquín, María Teresa Salegui Arbizu, Jacobo Llanza Figueroa						
	Automotive:		28,124	3,461 Mio €	100.0%	Annual Report: https://www.cieautomotive.com/web/investors-website Press Releases: https://www.cieautomotive.com/press-center Suppliers: https://supplychain.cieautomotive.com/Home/Login						
	Americas:		n.a.	1,243 Mio €	35.9%							
	NAFTA/North America:		6,971	917 Mio €	26.5%							
	South America:		3,499	326 Mio €	9.4%							
	Asia-Pacific:		10,595	758 Mio €	21.9%							
	Other foreign countries		n.a.	n.a.	n.a.							
	Europe:		7,119	1,461 Mio €	42.2%							
	Germany:		n.a.	n.a.	n.a.							
	Further Information											
	Company profile:	CIE Automotive supplies components and subassemblies to the global automotive market using complementary technologies and a range of associated processes. Since it was set up in 1996, CIE Automotive has acquired and integrated over 100 automotive sector companies. That growth story continued in 2019 with the acquisitions of Inteva's roof systems divisions (now called CIE Golde), Aurangabad Electricals Limited (AEL) and Mapremex.										
	Revenue split:	CIE Automotive posted a net profit of €287.5 million in 2019, marking growth of 18% from 2018.										
	Sites (production/R&D):	110 Manufacturing facilities in 103 locations across 16 countries. 101 of the plants are total certificated - 42 in Europe, 16 in North America, 12 in Brazil and 31 in India and China. In 2019, CIE Automotive's value proposition was underpinned by around 25,000 suppliers, who invoiced the company for over €1.9 billion of goods and services. 91.6% of CIE Automotive's suppliers are local firms and account for around 79% of group purchases.										
	R&D facts:	10 dedicated R&D centres.										
	Main automotive Customers:	CIE Automotive sells its products to OEMs (approx. 70%) and Tier-1 suppliers (approx. 30%): Ford, Daimler, Volkswagen, Chrysler, Renault, GM, Magna, Mahindra, PSA, Nissan, ZF, Caterpillar, Fiat, Tesla, Nexteer and others.										
	Main automotive products:	Roof Systems (shades and blinds, glass systems and roofs), Bodywork, Chassis & Steering, Interior and Exterior, Trim Commercial Vehicles, Engines, Transmission and Gearboxes.										
	Main automotive competitors:	n.a.										
	Sources:	Annual Report, Company Information										
	Annotations:											


Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
77 ▲ (0)	 TI Fluid Systems 4650 Kingsgate Oxford OX4 2SU United Kingdom www.tifluidsystems.com FY ended: Dec, 31		in figures only:	in figures: in % of Total Sales:	Fluid Carrying Systems Fuel Tank and Delivery Systems							
			Mio US\$ 2019	3,818	3,818	100.0%	2,147	1,672				
			Mio US\$ 2018	n.a.	n.a.	100.0%	n.a.	n.a.				
			Mio US\$ 2017	n.a.	n.a.	100.0%	n.a.	n.a.				
			Mio €/2019	3,411	3,411	100.0%	1,918	1,494				
			Mio €/2018	3,473	3,473	100.0%	2,027	1,446				
			Mio €/2017	3,491	3,491	100.0%	n.a.	n.a.				
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 27,300 2018: n.a.		3,411 Mio €	100.0%	William L. Kozyra: Chief Executive Officer and President; Ronald Hundzinski: Chief Financial Officer; Susan Levine: Non-Executive Director; Tim Cobbold: Senior Independent Director						
	Automotive:		27,300	3,411 Mio €	100.0%	Contact: https://www.tifluidsystems.com/contact-us/ Annual Reports: https://investors.tifluidsystems.com/reports-and-presentations/2020 Press Releases: https://www.tifluidsystems.com/press-releases/						
	Americas:		8,100	1,012 Mio €	29.7%							
	NAFTA/North America:		6,900	937 Mio €	27.4%							
	South America:		1,200	75 Mio €	2.2%							
	Asia-Pacific:		8,100	1,031 Mio €	30.2%							
	Japan:		n.a.	n.a.	n.a.							
	Europe:		*11,100	1,369 Mio €	40.1%							
	Further Information											
	Company profile:	TI Fluid Systems is a leading global manufacturer of highly engineered fluid storage, carrying and delivery systems, primarily providing products and services for light vehicles. TI Fluid Systems operates with two divisions: Fluid Carrying Systems ("FCS"): The FCS division manufactures brake and fuel lines, thermal management fluid systems including hybrid electric vehicle „HEV“ and battery electric vehicle „BEV“ thermal management products and powertrain products. Fuel Tank and Delivery Systems ("FTDS"): The FTDS division produces fuel tank systems and pumps and module fuel delivery systems including HEV pressure-resistant fuel tanks.										
	Revenue split:	see above										
	Sites (production/R&D):	With 108 manufacturing locations in 28 countries, our strength lies in our ability to creatively meet the ever-changing needs of the global automotive industry.										
	R&D facts:	Research and development costs 2019: 76.8 Mio€/2018 76.2 Mio€.										
	Main automotive Customers:	Daimler, Hyundai, Volkswagen, Ford, Renault-Nissan, FCA, Toyota, PSA, GM, BMW, other OEMs.										
	Main automotive products:	see Company profile										
	Main automotive competitors:	n.a.										
	Sources:	Annual Report										
	Annotations:	*incl. Africa										


Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
80 ▲ (85)	 Hutchinson S.A. 2 rue de Balzac 75008 Paris France www.hutchinson-worldwide.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:					
			Mio US\$ 2019	4,829	3,506*	72.6%				
			Mio US\$ 2018	4,909	3,563*	72.6%				
			Mio US\$ 2017	4,650	3,370*	72.5%				
			Mio Euro/€ 2019	4,314	3,132	72.6%				
			Mio Euro/€ 2018	4,154	3,015	72.6%				
			Mio Euro/€ 2017	4,115	2,983	72.5%				
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2019: 44,000 2018: 44,000		4,314 Mio €	100.0%	Jacques Maigné: Chairman and Chief Executive Officer;				
	Automotive:	n.a.		3,132 Mio €	72.6%	Contact: http://www.hutchinson.com/en/contact-us Press releases: https://www.hutchinson.com/en/media				
	Americas:	n.a.		n.a.	n.a.					
	NAFTA/North America:	n.a.		n.a.	n.a.					
	South America:	n.a.		n.a.	n.a.					
	Asia-Pacific:	n.a.		n.a.	n.a.					
	Japan:	n.a.		n.a.	n.a.					
	Europe:	n.a.		n.a.	n.a.					
	Germany:	n.a.		n.a.	n.a.					
Further Information										
	Company profile:	Hutchinson Worldwide was founded in 1853 by Hiram Hutchinson and began manufacturing bicycle tires in 1890. It is headquartered in Paris, France. Now, in addition to bike tires, it specializes in sealing, insulation, and fluid transfer systems. Since 1974 Hutchinson is Part of TOTALS Specialty Chemicals segment. In 2013 Hutchinson's identity has been redesigned, with a new logo and a new tag line.								
	Revenue split:	Automotive, Aerospace. Other markets: Railroad, Defense, Energy.								
	Sites (production/R&D):	Hutchinson has 100 sites in 5 continents.								
	R&D facts:	The corporate research and innovation center has more than 200 engineers. There are more than 27 technical centers and an number of university partnerships worldwide.								
	Main automotive Customers:	Major OEMs as BMW, Daewoo, Fiat, Ford, GM, Daimler, Honda, Hyundai, Nissan, Opel, PSA, Renault, Suzuki, Toyota and Tier 1s.								
	Main automotive products:	Fluid transfer systems, body sealing systems, transmission systems, automotive antivibration, sealants, adhesives&coatings, o-rings, molded parts, flat seals, foam, and converting products, body parts, spare parts.								
	Main automotive competitors:	3m, Alcoa, American Axle, meritor, Aisin Seiki, behr, benteler, bosch, Carraro, Cooper-Standard Automotive, dana, delphi, Eirlingklinger, Federal mogul, Freudenberg, Getrag, Gkn, magna international, mando, metaldyne, modine, Siemens Vdo, thyssenkrupp, ti Automotive, tower Automotive, toyoda Gosei, trelleborg, trW, Valeo, Visteon, ZF.								
	Sources:	Annual Report, Company Information								
	Annotations:	*Estimated, Hutchinson did not publish automotive business figures in 2019.								



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
81 ▲ (83)	 Sumitomo Riko JP Tower Nagoya 1-1-1, Meieki, Nakamura-ku, Nagoya-shi, Aichi 450-6316, Japan www.sumitomoriko.co.jp FY ended: March, 31		in figures only:	in figures:	In % of Total Sales:	Automotive-products*	General industrial products*			
			Mio US\$ 2019/20	4,083	3,466	84.9%	3,466	616		
			Mio US\$ 2018/19	4,254	3,606	84.8%	3,606	648		
			Mio US\$ 2017/18	4,129	3,510	85.0%	3,510	619		
			Mio Yen/¥ 2019/20	445,100	377,900	84.9%	377,900	67,200		
			Mio Yen/¥ 2018/19	469,705	398,160	84.8%	398,160	71,545		
			Mio Yen/¥ 2017/18	462,885	393,440	85.0%	393,400	69,400		
	Global Footprint	Employees	Regional Sales		Board					
	Total:	2019: 26,109 2018: 26,156		445,100 Mio ¥	100.0%	Tetsu Matsui: Representative Director and President & CEO; Kazushi Shimizu: Representative Director and President & CEO; Yoji Suzuki: Representative Director and Executive Vice President; Hirohisa Maeda: Director and Senior Managing Executive Officer; Tsukasa Oshima, Shinichi Waku: Director and Managing Executive Officer; Masaaki Iritani, Shigeru Hanagata, Mariko Miyagi: Outside Director				
	Automotive:	n.a.		377,900 Mio ¥	84.9%	Annual Reports: https://www.sumitomoriko.co.jp/english/ir/integrated_report.html Press Releases: https://www.sumitomoriko.co.jp/english/news/				
	Americas:	4,700		101,700 Mio ¥	22.8%					
	NAFTA/North America:	n.a.		n.a.	n.a.					
	South America:	n.a.		n.a.	n.a.					
	Asia-Pacific:	10,965		134,900 Mio ¥	30.3%					
	Japan:	5,483		208,700 Mio ¥	46.8%					
	Europe and others:	4,960		53,200 Mio ¥	7.9%					
	Germany:	n.a.		n.a.	n.a.					
Further Information										
	Company profile:	Founded in 1929, Sumitomo Riko is a manufacturing company headquartered in Nagoya-shi, Aichi, Japan. We changed our name from Tokai Rubber Industries, Ltd. in 2014. In the field of Automotive(Mobility), we manufacture anti-vibration rubber parts, in which we have a leading global share, as well as rubber and resin hoses, urethane sound controlling & insulation products, and interior equipment. We are also applying the technologies we have accumulated in automobile parts development to expand our business in the fields of infrastructure and housing environment, electronics, and healthcare. Utilizing our global network of 106bases in 23 countries, we aim to be a Global Excellent Manufacturing Company that contributes to the safety, comfort, and environmentofpeople worldwide.								
	Revenue split:	Automotive products 85%, General industrial products 15%.								
	Sites (production/R&D):	Sumitomo Riko has 86 bases in 24 countries worldwide.								
	R&D facts:	n.a.								
	Main automotive Customers:	All major OEMs and suppliers.								
	Main automotive products:	Anti-vibration rubber products, hoses, sound controlling & insulation products, interior equipment.								
	Automotive market leader in:	Sumitomo Riko holds the largest market share of automotive anti-vibration products.								
	Sources:	Financial Results, Integrated Report, Corporate Website, Company Information								
	Annotations:	*both together are the Vehicle Goup that has joint management, but are reported separately due to the relative new organization.								



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates										
82 ▲ (86)	 Toyo Tire & Rubber Co., Ltd. 1-17-18 Edobori Nishi-ku Osaka 550-8661 Japan www.toyo-rubber.co.jp FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Tires	Automotive Parts								
			Mio US\$ 2019	3,462	3,462	100.0%	3,053	409							
			Mio US\$ 2018	3,561	3,561	100.0%	3,095	466							
			Mio US\$ 2017	3,613	3,392	93.9%	2,918	474							
			Mio Yen/¥ 2019	377,457	377,457	100.0%									
			Mio Yen/¥ 2018	393,220	393,160	100.0%	341,694	51,466							
			Mio Yen/¥ 2017	404,999	380,247	93.9%	327,092	53,150							
			Global Footprint	Employees	Regional Sales	Board									
			Total:	2019: 13,132 2018: 12,804	377,457 Mio ¥	100.0%	President & CEO: Takashi Shimizu; Senior Corporate Officers: Tomoshige Mizutani, Masayuki Kanai, Shinji Tanabe; Corporate Officer: Iori Suzuki, Tatsuo Mitsuhashi, Yoji Imura, Takehiko Sasamori, Hideaki Takahashi, Satoru Moriya, Hidefumi Uematsu, Masao Takiwaki, Tetsuo Shimomura, Kenta Kuribayashi Annual Reports: https://www.toyotires-global.com/ir/library/annual/ Press Releases: https://www.toyotires-global.com/press/								
			Automotive:	n.a.	377,457 Mio ¥	100.0%									
Americas:	n.a.	197,698 Mio ¥	52.4%												
NAFTA/North America:	n.a.	197,698 Mio ¥	52.4%												
South America:	n.a.	n.a.	n.a.												
Asia-Pacific:	n.a.	n.a.	n.a.												
Japan:	n.a.	113,473 Mio ¥	30.1%												
Others:	n.a.	66,286 Mio ¥	17.6%												
Germany:	n.a.	n.a.	n.a.												
Further Information															
Company profile:	Since its founding in 1945, Toyo Tire & Rubber Co., Ltd., is involved mainly in the manufacture and sale of automobile tires. The Automotive Parts Business Unit develops products such as anti-vibration rubber for cars.														
Revenue split:	The manufacture and sale of tires is the core business of Toyo Tire, accounting for approximately 85% of total sales. Automotive Parts Business accounts for approximately 20% of total sales by the company.														
Sites (production/R&D):	The Company has 48 sites and offices and 3 subsidiaries companies. Group companies are operating in over 100 countries and regions.														
R&D facts:	2019: n.a. R&D expenditures in 2018 were 10,878 millions of Yen (2017: 10,943; 2016: 10,474; 2015: 10,199; 2014: 10,152).														
Main automotive Customers:	OEMs and aftermarket.														
Main automotive products:	Tires (for passenger vehicles, trucks & buses, construction machinery, industrial trucks), other related products, Automobile components.														
Main automotive competitors:	Bridgestone, Michelin, Continental, Goodyear, Pirelli, Yokohama, Cooper, Kumho, Hankook and others.														
Sources:	Company Information														
Annotations:															



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates										
83 ▲ (88)	 Compagnie de Saint-Gobain S.A. Tours Les Miroirs 18 Avenue d'Alsace 92096 La Défense Cedex, France www.saint-gobain.com FY ended: Dec, 31		in figures only:	in figures:*	In % of Total Sales:	Northern Europe	High-Performance Materials	Southern Europe - ME & Africa	Americas	Asia-Pacific	Internal sales and misc.				
			Mio US\$ 2019	47,656	3,431	7.2%	16,856	8,490	15,251	6,218	2,113	1,272			
			Mio US\$ 2018	49,364	3,371	6.8%	18,076	8,709	15,642	6,114	2,203	1,380			
			Mio US\$ 2017	46,119	3,136	6.8%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
			Mio Euro/€ 2019	42,573	3,056	7.2%	15,058	7,584	13,624	5,555	1,888	-1,136			
			Mio Euro/€ 2018	41,774	2,853	6.8%	15,297	7,370	13,237	5,174	1,864	-1,168			
			Mio Euro/€ 2017	40,810	2,775	6.8%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
			Global Footprint	Employees	Regional Sales	Board									
			Total:	2019: 180,941 2018: 181,526	42,573 Mio €	100.0%	Pierre-André de Chalendar: Chairman and CEO; Benoit Bazin: Chief Operating Officer; Armand Ajdari: Vice-President, Research & Development; Patrick Dupin: Senior Vice-President, CEO Northern Europe Region; Thierry Fournier: Senior Vice-President, CEO Latin America Region; Javier Gimeno: Senior Vice-President, CEO Asia-Pacific Region; Cordula Gudduschat: Vice-President, Marketing and Development; Press Releases: https://www.saint-gobain.com/en/press Annual Reports: https://www.saint-gobain.com/en/finance Press Releases: https://www.saint-gobain.com/en/press								
			Automotive:	n.a.	3,056 Mio €	7.2%									
Americas:	n.a.	n.a.	n.a.												
NAFTA/North America:	n.a.	n.a.	n.a.												
South America:	n.a.	n.a.	n.a.												
Asia-Pacific:	n.a.	n.a.	n.a.												
Africa:	n.a.	n.a.	n.a.												
Europe:	n.a.	n.a.	n.a.												
France:	n.a.	n.a.	n.a.												
Further Information															
Company profile:	With a long international history, which began in France in 1665 when the Royal Glass Works was established, the Saint-Gobain group is now the world leader on habitat and construction materials, providing innovative solutions to save energy and protect the environment. The Innovative Materials Sector, comprising the Flat Glass and the High-Performance Materials Divisions offers a unique portfolio for automotive industry. Saint-Gobain Sekurit's operations cover three markets: automotive glass originally installed by automakers (OEM), automotive glass replacement (aftermarket), glass for transport vehicles (buses, lorries, aeronautics).														
Revenue split:	The Group's 2019 sales totaled €42,573 million, up 1.9%. Mobility sales were up slightly in a global automotive market that remains challenging (market volumes down around 6%), but benefited from a weaker comparison basis in the second half. A new organizational and management structure began to be put in place from January 1, 2019. The new structure consists of five reporting units: four regional businesses and a global High Performance Solutions unit.														
Sites (production/R&D):	With more than 34,000 people in 34 countries, the Flat Glass activity is the leading flat glass manufacturer in Europe and number two worldwide.														
R&D facts:	Research and development costs recorded under operating expenses, amounting to €466 million in 2019. In 2018, the Group invested €451 million in research and development, and 3,700 employees worked on nearly 900 research projects, resulting in applications for nearly 400 new patents.														
Main automotive Customers:	All major OEMs: VW, Renault, PSA, GM, Hyundai-KIA, Ford, Fiat, BMW, Daimler, Mazda, Toyota, Others. One out of two European cars is equipped with Saint-Gobain Sekurit automotive glass.														
Main automotive products:	Saint-Gobain produces and sells flat glass, and process and distributes, glass solutions for the building market, the automotive industry and transport. Flat glass/Automotive glazing; agglomerate abrasives, Coated abrasives, Superabrasives; bearings and seals, Fluid control systems, Films, foams, coated fabrics.														
Main automotive competitors:	Glazing: NSG, Asahi; Performance plastics: Trelleborg, Glaciar Garlock, Oiles, 3M, Rogers, DuPont, Nitto Denko, Entegris, Stedim, Parker Hannifin, Kuriyama; Abrasives: Winterthur Technologie, Tyrolit, 3M, Hermes, SIA														
Sources:	Annual Report, Company Information, most sales not consolidated due to late General Meeting														
Annotations:	*automotive sales are estimated ** restated														



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Automotive Business	Industrial Business	Others			
84 ▼ (82)	RENESAS Renesas Electronics Corporation TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku Tokyo 135-0061 Japan www.renesas.com FY ended: Dec, 31										
			Mio US\$ 2019	6,588	3,405	51.7%	3,405	3,024	160		
			Mio US\$ 2018	6,852	3,608	52.7%	3,608	3,139	183		
			Mio US\$ 2017*	6,961	3,638	52.3%	3,638	n.a.	n.a.		
			Mio Yen/¥2019	718,241	371,145	51.7%	371,145	329,705	17,393		
			Mio Yen/¥2018	756,503	389,351	52.7%	398,351	364,569	20,251		
			Mio Yen/¥2017*	780,300	407,800	52.3%	407,800	n.a.	n.a.		
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 18,958 2018: 19,546	718,241 Mio ¥		100.0%						
	Automotive:	n.a.	371,145 Mio ¥		51.7%						
	Americas:	n.a.	n.a.		n.a.						
	NAFTA/North America:	n.a.	66,228 Mio ¥		9.2%						
	China:	n.a.	150,486 Mio ¥		21.0%						
	Asia-Pacific:	n.a.	530,108 Mio ¥		73.8%						
	Japan:	n.a.	261,663 Mio ¥		36.4%						
	Europe:	n.a.	118,990 Mio ¥		16.6%						
	Others:	n.a.	2,917 Mio ¥		0.4%						
	Further Information										
	Company profile:	As the world leader in microcontrollers, analog, power and SoC products and integrated platforms, Renesas offers the know-how, quality and comprehensive solutions for a wide range of automotive, industrial, home electronics, office automation and information communications applications. Following the completion of the Intersil acquisition in February 2017 the company has reformed its business organization. The company redefined its semiconductor sales breakdown to: Automotive, Industrial and Broad-based, the three application categories that constitute the main businesses of the Group, and Other semiconductors, that constitute the businesses that do not belong to the above three application categories.									
	Revenue split:	The Automotive business includes the product categories „Automotive control“, comprising semiconductor devices for controlling automobile engines and bodies, and „Automotive information“, comprising semiconductor devices used in automotive information systems such as navigation systems. Non-GAAP revenue of the Automotive business for the year 2019 was 371.1 billion yen, a decrease of 4.8% year on year.									
	Sites (production/R&D):	Renesas Electronics has subsidiaries in 20 countries worldwide.									
	R&D facts:	R&D expenses 2019 were 127.1 mio JPY (2018: 126.5 mio JPY; 2017: 127.5 mio JPY)									
	Main automotive Customers:	n.a.									
	Main automotive products:	The Group mainly supplies microcontrollers (MCUs), system-on-chips (SoCs), analog semiconductor devices and power semiconductor devices in each of these categories.									
	Main automotive competitors:	Eg. Infineon, NXP, TI, STMicro, Bosch, ON Semi, Rohm, Toshiba, ADI									
	Sources:	Annual Report, Company Information									
	Annotations:	* From the fiscal year ended December 31, 2019, the Group has implemented a change in the Group's classification of segments. The information on reportable segments for the fiscal year ended December 31, 2018 has also been reclassified in accordance with the new classification of reportable segments.									



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates						
			in figures only:	in figures:	in % of Total Sales:	Vehicle	Aerospace	Hydraulics	Electrical Products	Electrical Systems and Services	eMobility	
85 ▼ (79)	EAT-ON Eaton Corporation Eaton House 30 Pembroke Road Dublin 4 Ireland www.eaton.com FY ended: Dec, 31											
			Mio US\$ 2019	21,390	3,359	15.7%	3,038	2,044	2,552	7,148	6,287	321
			Mio US\$ 2018	21,609	3,809	17.6%	3,489	1,896	2,756	7,124	6,024	320
			Mio US\$ 2017	20,404	3,333	16.3%	3,333	1,744	2,468	7,193	5,666	283
	Global Footprint	Employees	Regional Sales		Board							
	Total:	2019: 101,000 2018: 99,000	21,390 Mio US\$		100.0%							
	Automotive:	n.a.	3,359 Mio US\$		15.7%							
	Americas:	n.a.	14,589 Mio US\$		68.2%							
	NAFTA/North America:	n.a.	13,277 Mio US\$		62.1%							
	South America:	n.a.	1,312 Mio US\$		6.1%							
	Asia-Pacific:	n.a.	2,490 Mio US\$		11.6%							
	Japan:	n.a.	n.a.		n.a.							
	Europe:	n.a.	4,311 Mio US\$		20.2%							
	Germany:	n.a.	n.a.		n.a.							
	Further Information											
	Company profile:	Eaton Corporation plc is a power management company with 2018 net sales of \$21.6 billion and was incorporated under the laws of Ireland on May 2012 and became the successor registrant to Eaton Corporation in connection with the consummation of the acquisition of Cooper Industries plc.										
	Revenue split:	Net sales in 2019 decreased by 1% compared to 2018 due to a decrease of 1% from the impact of negative currency translation. In 2019, 61% of the vehicles segment's sales were made to ten large original equipment manufacturers of vehicles and related components. 23% of the eMobility segment's sales were made to five large original equipment manufacturers of vehicles, construction equipment and related components.										
	Sites (production/R&D):	Eaton has approximately 101,000 employees in 60 countries and sells products to customers in more than 175 countries.										
	R&D facts:	Research and development expenses for new products and improvement of existing products in 2019, 2018, and 2017 were \$606 million, \$584 million and \$584 million, respectively. Over the past six years, the Company has invested approximately \$3.7 billion in research and development.										
	Main automotive Customers:	The principal markets for the Vehicle and the eMobility segment are original equipment manufacturers and aftermarket customers of heavy-, medium-, and light-duty trucks, SUVs, CUVs, passenger cars and agricultural equipment. These manufacturers are located globally and most sales of these products are made directly to such manufacturers. Customers in 175 countries. No single customer represented greater than 10% of net sales.										
	Main automotive products:	The Vehicle segment is a leader in the design, manufacture, marketing, and supply of: drivetrain, powertrain systems and critical components that reduce emissions and improve fuel economy, stability, performance, and safety of cars, light trucks and commercial vehicles. Products include transmissions, clutches, hybrid power systems, superchargers, engine valves and valve actuation systems, cylinder heads, locking and limited slip differentials, transmission controls, fuel vapor components, fuel connectors and conveyance products for the global vehicle industry. The eMobility segment designs, manufactures, markets, and supplies electrical and electronic components and systems that improve the power management and performance of both on-road and off-road vehicles. Products include high voltage inverters, converters, fuses, onboard chargers, circuit protection units, vehicle controls, power distribution, fuel tank isolation valves, and commercial vehicle hybrid systems.										
	Main automotive competitors:	E. g. American Axle & Manufacturing, Cummins, BorgWarner, TRW Automotive, Mahle, Tyco, Kolbenschmidt Pierburg, Getrag.										
	Sources:	Annual Report										



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Automobile Segment	Motorcycle Segment	Other Segment			
88 ▼ (81)	 TS Tech Co., Ltd. 3-7-27 Sakae-cho, Asaka-shi, Saitama-ken 351-0012, Japan www.tstech.co.jp FY ended: March, 31										
			Mio US\$ 2019/20	3,299	3,201	97.0%	3,201	46	53		
			Mio US\$ 2018/19	3,732	3,622	97.0%	3,622	59	52		
			Mio US\$ 2017/18	4,278	4,166	97.4%	4,166	60	52		
			Mio Yen/¥ 2019/20	359,682	348,937	97.0%	348,937	4,996	5,748		
			Mio Yen/¥ 2018/19	412,072	399,871	97.0%	399,871	6,504	5,696		
			Mio Yen/¥ 2017/18	479,490	466,996	97.4%	466,996	6,718	5,775		
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2020: 16,859 2019: 17,014		359,682 Mio ¥	100.0%	Chairman and CEO: Michio Inoue; President: Masanari Yasuda; Senior Managing Directors: Yoshiaki Yui, Minoru Maeda, Yoshitaka Nakajima, Hitoshi Yoshida; Manging Directors: Koichi Mase, Akihiko Hayashi, Kenichi Hasegawa, Yutaka Arai; Directors: Atsushi Igaki, Yoshikazu Ariga, Shizuo Kitamura, Teruyasu Mutaguchi;					
	Automotive:		n.a.	348,937 Mio ¥	97.0%	Press Releases: https://www.tstech.co.jp/english/ir/ir-news/ Annual Reports: https://www.tstech.co.jp/english/ir/closing.html					
	Americas:		n.a.	167,187 Mio ¥	46.5%						
	NAFTA/North America:		n.a.	167,187 Mio ¥	46.5%						
	South America:		n.a.	n.a.	n.a.						
	China:		n.a.	77,735 Mio ¥	20.3%						
	Japan:		n.a.	56,137 Mio ¥	15.6%						
	Europe and Asia*:		n.a.	58,620 Mio ¥	16.3%						
	Germany:		n.a.	n.a.	n.a.						
	Further Information										
	Company profile:	The TS Tech Group consists of TS Tech Co., Ltd. and more than 40 related companies in Japan and abroad. By segment, the Group consists of four regions including Japan, Americas, China and Asia and Europe. In addition, the Group maintains a close, ongoing relationship with Honda Motor Co., Ltd., one of its major business partners, on business. TS Tech Co., Ltd. and its consolidated subsidiaries manufacture automobile seats, automobile interiors, motorcycle seats, and resin-based products formotorcycles, among other products.									
	Revenue split:	The Group operates in three business segments: Motorcycle, Automobile and Other Revenue split. Revenue for the fiscal year 2020 amounted to 359,682 million yen on a consolidated basis, down 52,389 million yen (12.7%) from the preceding fiscal year.									
	Sites (production/R&D):	More than 50 consolidated subsidiaries locations in Japan and Overseas. In North America, South America, China, other countries in Asia, and Europe, the Group has established local manufacturing subsidiaries and is pursuing an aggressive strategy of overseas business development. Locations in Japan: 8, Subsidiaries and Affiliates in Japan: 9, Overseas Locations: 35.									
	R&D facts:	Research and development expenses included in selling, general and administrative expenses and manufacturing expenses in FY 2019/2020 are 12,370 million yen, FY 2017/2018 are 11,980 million yen, in FY 2016/2017 are 12,380 million yen and in FY 2015/2016 are 13,160 million yen.									
	Main automotive Customers:	Honda Motor Co., Ltd. (sales in 2018/19: 378,537 Mio JPY), Honda R&D Co.,Ltd., Honda Trading Corporation, Honda Access Corp., Suzuki Motor Corporation, Yamaha Motor Co.,Ltd., Kawasaki Heavy Industries, Ltd., Harley-Davidson, Inc..									
	Main automotive products:	Manufacturing and sales of automobile seats; automobile interiors; motorcycle seats; and resin-based products for motorcycles.									
	Main automotive competitors:	E. g. Delphi, Faurecia, Grupo Antolin, Intier Automotive, Johnson Controls, Lear, Tachi-S, Toyota Boshoku and Visteon Corporation.									
	Sources:	Annual Report, Company Information									
	Annotations:	Asia* (excl. Japan and China)									



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Seating systems	Fuel and brake delivery systems	Fluid transfer systems	Anti vibration systems	Others	
89 ▼ (80)	 Cooper Standard Holdings Inc. 39550 Orchard Hill Place, Novi Michigan, USA www.cooperstandard.com FY ended: Dec, 31										
			Mio US\$ 2019	3,108	3,108	100.0%	1,534	741	598	79	156
			Mio US\$ 2018	3,629	3,629	100.0%	1,801	798	564	339	127
			Mio US\$ 2017	3,618	3,618	100.0%	1,909	757	522	327	104
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 28,000 2018: 32,000		3,108 Mio US\$	100.0%	Jeffrey S. Edwards: Chairman and CEO; Jonathan P. Banas: Executive Vice President and CFO; Patrick R. Clark: Senior Vice President and Chief Global Engineering and Product Strategy Officer; Christopher E. Couch: Senior Vice President and CTO; Hans O. Helmrich: Senior Vice President and Chief Global Manufacturing Officer; John Li: Vice President and Managing Director, China; Larry E. Ott: Senior Vice President and Chief Human Resources Officer; D. William Pumphrey: Executive Vice President and President, Global Automotive;					
	Automotive:		28,000	3,108 Mio US\$	100.0%	Contact: http://www.cooperstandard.com/contact-us ; Annual Reports: http://www.ir.cooperstandard.com/index.cfm ; Press Releases: http://www.ir.cooperstandard.com/press-releases Suppliers: http://www.cooperstandard.com/public-data					
	Americas:		n.a.	1,736 Mio US\$	55.9%						
	NAFTA/North America:		n.a.	1,642 Mio US\$	52.8%						
	South America:		n.a.	95 Mio US\$	3.0%						
	Asia-Pacific:		n.a.	504 Mio US\$	16.2%						
	China:		n.a.	356 Mio US\$	11.4%						
	Europe:		n.a.	868 Mio US\$	27.9%						
	Germany:		n.a.	151 Mio US\$	4.9%						
	Further Information										
	Company profile:	Cooper-Standard Holdings inc. is a leading manufacturer of fluid handling, body sealing, and Anti-Vibration Systems (AVS) components, systems, subsystems, and modules. Their products are primarily for use in passenger vehicles and light trucks that are manufactured by global automotive OEMs and replacement markets. Cooper-Standard is headquartered in Novi, Mich.. Cooper-Standard Holdings was formed and capitalized in 2004 as a delaware corporation and began operating on December 23, 2004 when it acquired the automotive segment of Cooper tire&rubber Company.									
	Revenue split:	Approximately 85% of sales go to OEMs, including Ford Motor Company, General Motors Company, Fiat Chrysler Automobiles, PSA Peugeot Citroën, Volkswagen Group, Daimler, Renault-Nissan, BMW, Toyota, Volvo, Jaguar/Land Rover, Honda and various other OEMs based in China and India. The remaining 15% sales are primarily to Tier I and Tier II automotive suppliers, non-automotive customers, and replacement market distributors. The Company's products can be found on over 480 nameplates globally. In 2019, approximately 53% of sales were generated in North America.									
	Sites (production/R&D):	Cooper-Standard operations were conducted through 174 wholly-owned, leased and joint venture facilities in 21 countries of which 103 are predominantly manufacturing facilities and 71 have design, engineering, administrative or logistics designations.									
	R&D facts:	R&D costs are charged to selling, administration and engineering expenses as incurred and totaled \$114.9 million, \$123 million and \$128 million for the years ended December 31, 2019, 2018, and 2017, respectively.									
	Main automotive Customers:	Major customers include OEMs such as Ford (25%), GM (18%), FCA (12%), PSA (5%), Daimler (4%), Volkswagen Group (4%), Renault-Nissan, BMW, Toyota, Volvo, Jaguar/Land Rover, Honda and various other OEMs based in China and India. Cooper-Standard also sells products to Visteon, Toyota, and through Nishikawa Standard Company, Honda.									
	Main automotive products:	Sealing and trim systems products, fuel and brake delivery systems products, fluid transfer systems products, anti-vibration systems products.									
	Main automotive competitors:	Sealing systems products compete with Toyoda Gosei, Hutchinson, Henniges and Standard Profil, among others. Fuel and brake delivery products compete with TI Automotive, Sanoh, Martinrea and Maruyasu. Fluid transfer products compete with Conti-Tech, Hutchinson, Teklas, Tristone and MGI Coutier (including Avon Automotive).									
	Sources:	Annual Report, Company Information									



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
90 ▼ (87)	 Rheinmetall AG (Rheinmetall Automotive AG) Rheinmetall Platz 1 40476 Düsseldorf North-Rhine Westphalia Germany www.rheinmetall-automotive.com FY ended: Dec, 31		in figures only:	in figures:	in % of Total Sales:	Mechatronics	Hardparts	Aftermarket			
			Mio US\$ 2019	7,002	3,063	43.7%	1,707	1,049	404		
			Mio US\$ 2018	7,265	3,462	47.7%	n.a.	n.a.	n.a.		
			Mio US\$ 2017	6,663	3,233	48.5%	n.a.	n.a.	n.a.		
			Mio Euro/€ 2019	6,255	2,736	43.7%	1,525	937	361		
			Mio Euro/€ 2018	6,148	2,930	47.7%	1,664	988	367		
			Mio Euro/€ 2017	5,896	2,861	48.5%	n.a.	n.a.	n.a.		
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 25,767 2018: 24,948	6,255 Mio €		100.0%	Armin Papperger: Chief Executive Officer; Helmut P. Merch: Chief Financial Officer, Member of the Executive Board, Responsible for Finance and Controlling; Peter Sebastian Krause: Member of the Executive Board Responsible for Human Resources, Director of Industrial Relations;					
Automotive:			12,393	2,736 Mio €	43.7%	Peter Sebastian Krause: Member of the Executive Board Responsible for Human Resources, Director of Industrial Relations;					
Americas:			n.a.	655 Mio €	10.5%	Contact: https://www.rheinmetall-automotive.com/informationen/kontakt/ Annual Report: https://www.rheinmetall-automotive.com/en/company/publications/annual-reports/ Press Releases: https://www.rheinmetall-automotive.com/en/press/press-releases/					
NAFTA/North America:			n.a.	n.a.	n.a.						
South America:			n.a.	n.a.	n.a.						
Asia-Pacific:			n.a.	1,080 Mio €	17.3%						
Others:			n.a.	708 Mio €	11.3%						
Europe:			n.a.	n.a.	n.a.						
Germany:			n.a.	n.a.	n.a.						
Further Information											
Company profile:		Rheinmetall Automotive AG is the parent company of Rheinmetall's Automotive sector. As a global first-tier supplier to the automotive industry, Rheinmetall Automotive thanks to its vast capabilities commands foremost positions in the product and component segments air supply, emission control and pumps as well as in the development, manufacture and aftermarket supply of pistons, engine blocks, and plain bearings. In line with its strategic focus, the Group has three premium brands: Kolbenschmidt, Pierburg und Motorservice and employs a workforce of around 12,400 employees at its production locations in Europe, North and South America, Japan, India plus China.									
R&D facts:		In fiscal 2019, €355 million was spent on research and development throughout the Group in 2018, following €336. Employees in research and development: 4,129.									
Main automotive Customers:		Ford, VW Group, Renault/Nissan, GM, Fiat/Chrysler, Daimler, BMW Group, Volvo/Geely, DAF Group, PSA, Cummins, CAT/Perkins									
Main automotive products:		Focus: Development, manufacturing and aftermarket supply of components for IC engines, hybrids and electric vehicles. Mechatronics (Pierburg) automotive emission systems, solenoid valves, actuators, commercial diesel systems and pump technology. Hardparts (KS Kolbenschmidt): small-bore pistons, large-bore pistons, bearings, aluminum castings. Aftermarket (MS Motorservice) automotive parts for engine repair and workshops.									
Main automotive competitors:		n.a.									
Sources:		Annual Report, Company Information									
Annotations:											



Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
91 ▲ (92)	 Fuyao Glass Industry Group CO., LTD. District II of Fuyao Industrial Zone, Fuqing City, Fujian Province China www.fuyaogroup.com FY ended: Dec. 31		in figures only:	in figures:	In % of Total Sales:	Automotive Glass	Float glass	Others	Intragroup elimination		
			Mio US\$ 2019	3,055	3,055	100.0%	2,744	528	276	492	
			Mio US\$ 2018	3,060	3,060	100.0%	2,928	487	87	442	
			Mio US\$ 2017	2,770	2,770	100.0%	2,644	429	92	395	
			Mio RMB 2019	21,204	21,204	100.0%	18,957	3,645	1,903	3,402	
			Mio RMB 2018	20,225	20,225	100.0%	19,352	3,221	573	2,921	
			Mio RMB 2017	18,716	18,716	100.0%	17,868	2,899	621	2,672	
Global Footprint		Employees	Regional Sales		Board						
Total:		2019: 26,727 2018: 27,067	21,204 Mio RMB		100.0%	Executive Directors: Cho Tak Wong, Ye Shu, Chen Xiangming; Non-Executive Directors: Tso Fai, Wu Shinong, Zhu Dezheng; Independent Non-executive Directors: Cheung Kit Man Alison, Liu Jing, Qu Wenzhou; Senior management: Ye Shu, He Shimeng, Chen Juli, Huang Xianqian, Lin Yong, Wu Lide, Li Xiaoxi					
Automotive:			n.a.	21,204 Mio RMB	100.0%	Contact: http://www.fuyaogroup.com/en/contact.html Annual Reports: http://www.fuyaogroup.com/en/reports.html Press Releases: http://www.fuyaogroup.com/en/news.html					
Americas:			n.a.	n.a.	n.a.						
NAFTA/North America:			n.a.	n.a.	n.a.						
South America:			n.a.	n.a.	n.a.						
Asia-Pacific:			n.a.	n.a.	n.a.						
China:			n.a.	10,810	51.0%						
Other countries:			n.a.	10,294	49.0%						
Germany:			n.a.	n.a.	n.a.						
Further Information											
Company profile:		The Company was formerly known as Fujian Yaohua Glass Industry Group Co., Ltd., which was established in the Peoples Republic of China (PRC) on 14 April 1987 as a sino-foreign equity joint venture. On 21 June 1992, the Company was converted into a sino-foreign joint stock company with limited liability under the PRC Company Law and was renamed as Fuyao Glass Industry Group Co., Ltd..									
Revenue split:		The Group sells automotive glass to OEM and ARG customers in various countries and regions, including the PRC, the United States, the United Kingdom, Hong Kong, Germany and Japan. During the Reporting Period, sales of automotive glass of the Company increased by RMB 18,957,337.									
Sites (production/R&D):		Fuyao Group now boasts a number of production bases in 16 provinces and cities in China and 9 foreign countries, including United States, Russia, Germany, Japan, and South Korea; as well as 6 R&D centers in China, United States and Germany.									
R&D facts:		Total R&D expenses in 2019: RMB 813,130, in 2018: RMB 887,722, 2017: RMB 803,441 (2016: RMB 727,586; R&D staff: 3,972 employees).									
Main automotive Costumers:		The OEM customers include the world's top 20 automobile manufacturers by production volume, such as Toyota, Volkswagen, General Motors, Ford and Hyundai, and the top 10 passenger vehicle manufacturers in China by production volume, such as SAIC-GM, FAW-Volkswagen, Shanghai Volkswagen, Beijing Hyundai and Dongfeng Nissan, which are affiliates of or joint ventures operated by the world's top 20 automobile manufacturers. In 2019, the top five customers of the Group, all of which are independent third-party automotive glass customers, accounted for 16.94% of the revenue of the Group, and the largest customer accounted for 5.09% of the revenue of the Group.									
Main automotive products:		The principal business of the Company is the provision of total solution of safety glass for various transportation vehicles, including the provision of design, manufacture, sales and service for automotive grade float glass and automotive glass and locomotive glass. The business model of the Company is globalized research and development, design, manufacture, distribution and after-sales service.									
Main automotive competitors:		Major glass producers as PPG, Saint-Gobain Central Glass, Nippon Sheet Glass (Pilkington) Group, Guardian, Carraro S.p.A. and others.									
Sources:		Company Information, Web, Annual Report									



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates										
94 ▲ (98)	 Martinrea International 3210 Langstaff Road Vaughan Ontario L4K 5B2 Canada www.martinrea.com FY ended: Dec., 31		in figures only:	in figures:	In % of Total Sales:										
			Mio US\$ 2019	2,912	2,912	100.0%									
			Mio US\$ 2018	2,827	2,827	100.0%									
			Mio US\$ 2017	2,842	2,842	100.0%									
			Mio CAD 2019	3,864	3,864	100.0%									
			Mio CAD 2018	3,663	3,663	100.0%									
			Mio CAD 2017	3,690	3,690	100.0%									
			Global Footprint	Employees	Regional Sales	Board									
			Total:	2019: 17,000 2018: 15,000	3,864 Mio CAD	100.0%	Robert Wildeboer: Executive Chairman of the Board; Pat D'Eramo, President: Chief Executive Officer, Director; Fred Di Tosto: Chief Financial Officer; Juan Jose Nardiz Amurrio President - Martinrea Honsel; Robert Fairchild: Executive Vice President - Sales and Engineering; Armando Pagliari: Executive Vice President - Human Resources; Suppliers: https://www.martinrea.com/about-us/suppliers/ Annual Reports: https://www.martinrea.com/about-us/investor-relations/ Press Releases: https://www.martinrea.com/about-us/news-media/								
			Automotive:	17,000	3,864 Mio CAD	100.0%									
Americas:	n.a.	3,066 Mio CAD	79.4%												
NAFTA/North America:	n.a.	1,942 Mio CAD	50.3%												
South America:	n.a.	1,356 Mio CAD	35.1%												
Asia-Pacific:	n.a.	n.a.	n.a.												
Others:	n.a.	133 Mio CAD	3.4%												
Europe:	n.a.	672 Mio CAD	17.4%												
Germany:	n.a.	457 Mio CAD	11.8%												
Further Information															
Company profile:	Martinrea is an increasingly diversified and global automotive supplier, engaged in the design, development and manufacturing of quality metal parts, assemblies and modules and fluid management systems focused primarily on the automotive sector. Martinrea was formed 1998 by the amalgamation of several predecessor corporations and continued business under the successor corporation, Royal Laser Tech Corporation. As at December 31, 2019, Martinrea employed over 17,000 people.														
Revenue split:	n.a.														
Sites (production/R&D):	57 locations (including sales and engineering centers) in Canada, the United States, Mexico, Brazil, Germany, Spain, Slovakia, China, Japan and South Africa.														
R&D facts:	Research and development costs were \$38,035 thousand in 2019, \$26,564 thousand in 2018, \$26,597 in 2017, \$24,853 in 2016 and \$21,765 in 2015.														
Main automotive Customers:	E.g. Ford, Fiat, AMG, Jaguar, Eberspächer, Opel, GM, Kia, Land Rover, Audi, Toyota, BMW, ZF, Magna, Daimler, Volvo, Honda Renault/Nissan and more.														
Main automotive products:	The Company designs, engineers, manufactures, and sells quality metal parts, assemblies, and fluid management systems primarily serving the global automotive industry. It conducts its operations through divisions, which function as autonomous business units, following a corporate policy of functional and operational decentralization. The Company's products include a wide array of products, assemblies and systems for small and large cars, crossovers, pickups and sport utility vehicles.														
Main automotive competitors:	n.a.														
Sources:	Annual Report, Company Information														
Annotations:															



Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates										
95 ▼ (91)	 Sungwoo Hitech 619-731, 2-9 Nonggong-gill Giang-gun, Busa Korea www.swhitech.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:										
			Mio US\$ 2019	2,907	2,907	100.0%									
			Mio US\$ 2018	3,148	3,148	100.0%									
			Mio US\$ 2017	2,982	2,982	100.0%									
			Mio KRW 2019	3,389,454	3,389,454	100.0%									
			Mio KRW 2018	3,460,325	3,460,325	100.0%									
			Mio KRW 2017	3,366,359	3,366,359	100.0%									
			Global Footprint	Employees	Regional Sales	Board									
			Total:	2018: n.a. 2017: n.a.	3,389,454 Mio KRW	100.0%	Myeong Geun Lee: Chairman of the Board, Co-Chief Executive Officer; Hui Geun Park: Co-President, Director; Mun Yong Lee: Co-Chief Executive Officer, Director; Bong Sil Kang: Vice President, Director; Chang Hun Han: Director; Annual Report: http://english.swhitech.com/04IR/01_01.asp News: http://english.swhitech.com/program/langboard/1stBoardDoc.asp?cid=1								
			Automotive:	n.a.	3,389,454 Mio KRW	100.0%									
Americas:	n.a.	n.a.	n.a.												
NAFTA/North America:	n.a.	n.a.	n.a.												
South America:	n.a.	n.a.	n.a.												
Asia-Pacific:	n.a.	n.a.	n.a.												
Japan:	n.a.	n.a.	n.a.												
Europe:	n.a.	n.a.	n.a.												
Germany:	n.a.	n.a.	n.a.												
Further Information															
Company profile:	Sungwoo Hitech Co., Ltd. was founded in 1977 and is headquartered in Busan, South Korea. The company was formerly known as SungWoo Metal Co., Ltd. and changed its name to Sungwoo Hitech Co., Ltd. in April 2000.														
Revenue split:	Sungwoo Hitech Co.Ltd reported sales of 3.39 trillion Korean Won for the year ending December of 2019. Sales at Sungwoo Hitech Co.Ltd have increased during each of the previous five years.														
Sites (production/R&D):	Sungwoo Hitech manufactures and sells automobile components in South Korea, China, India, Russia, the Czech Republic, Slovakia, Uzbekistan, and Germany. Sungwoo Hitech counts 9 factories in South Korea and 14 affiliates in Asia and Europe.														
Main automotive costumers:	Audi, BMW, Cadillac, Daimler, Honda, Ferrari, Fiat/Chrysler, Ford, GM, Hyundai/Kia, Jaguar, Lotus, Mazda, Mitsubishi, Nissan, Peugeot, Porsche, Ssangyong, Toyota, Volvo, VW.														
R&D facts:	R&D Expenses were 32,489 Mio KRW in 2019.														
Main automotive products:	The Company's products include bumper rails, side members, fender apron completes, center floor completes, hood assemblies, dash completes, floor panel components, package-tray centers, inner lowers, side sills, center pilers and others.														
Automotive market leader in:	n.a.														
Main automotive competitors:	n.a.														
Sources:	Company Information, Web														

Rank	Company	Currencies	Total Sales	Automotive Sales*		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
96 ▶ (96)	 MITSUBA MITSUBA Corporation 1-2681 Hirosawa-cho Kiryu-shi Gunma 376-8555 Japan www.mitsuba.co.jp FY ended: March, 31		in figures only:	in figures:	in % of Total Sales:	Trans- portation Equipment- related Operations	Information Service Operations	Other					
			Mio US\$ 2019/20	2,935	2,789	95.0%	n.a.	n.a.	n.a.				
			Mio US\$ 2018/19	3,018	2,865	94.9%	2,865	119	34				
			Mio US\$ 201/18	3,454	3,311	95.9%	3,311	106	37				
			Mio Yen/¥ 2019/20	320,000	304,000	95.0%	n.a.	n.a.	n.a.				
			Mio Yen/¥ 2018/19	333,278	316,370	94.9%	316,370	13,157	3,750				
			Mio Yen/¥ 2017/18	387,186	371,159	95.9%	371,159	11,828	339				
Global Footprint	Employees	Regional Sales		Board									
Total:	2020: 28,433 2019: 26,845	320,000 Mio ¥	100.0%	President, COO: Katsuyoshi Kitada; Executive Vice President, Executive Officer: Nobuyuki Take; Managing Officers: Tokuyu Tanahashi, Kazumi Umahashi, Masayoshi Shirato, Masamichi Mogi, Yutaka Nozue, Sadami Hino, Hideyuki Minami, Masahiko Sugiyama; Operating Officers: Keiji Kiuchi, Kunio Nagai, Jun Abe, Ryu Saito, Koji Mizuno, Haruki Inamura, Hideo Imai, Isei Ko, Takeshi Yamazaki, Hideaki Komiya, Yusuke Ichikawa, Takashi Hanzawa, Tsutomu Idei, Kiyotaka Yoshida Contact: https://www.mitsuba.co.jp/english/contact_us Annual Reports: https://www.mitsuba.co.jp/english/ir/library Suppliers: http://www.mitsuba.co.jp/english/purchase									
Automotive:	n.a.	304,000 Mio ¥	95.0%										
Americas:	n.a.	n.a.	n.a.										
NAFTA/North America:	n.a.	n.a.	n.a.										
South America:	n.a.	n.a.	n.a.										
Asia-Pacific:	n.a.	n.a.	n.a.										
Japan:	n.a.	n.a.	n.a.										
Europe:	n.a.	n.a.	n.a.										
Germany:	n.a.	n.a.	n.a.										
Further Information													
Company profile:	Mitsuba Corporation, founded 1946 in Kiryu, is a Japan-based company engaged in the manufacture and sale of transportation equipment and the provision of information services.												
Revenue split:	The Company operates in three business segments. The Transportation Equipment-related segment (about 96% of sales) mainly provides wiper systems, starter motors, fan motors and power window motors, as well as transportation and warehousing services. The Information Service segment (3.0%) is engaged in the provision of system integration services, as well as the development of software and system. The Others segment (1%) is engaged in the provision of electric work, civil engineering and construction services, among others.												
Sites (production/R&D):	There are 53 group companies: Japan (including Mitsuba Corporation): 21, The Americas: 5, Europe/Africa: 8, Asia: 12, China: 7. Sales Breakdown by geographic region: Japan 28.3%, The Americas 28.1%, China 21.3%, Asia 17.5% and Europe 4.8%.												
R&D facts:	Expenses for R&D since FY 2016/17: n.a.												
Main automotive Customers:	BMW, Brose, Calsonic Kansei, Daihatsu, FCA, GM, Hi-lex, Honda, Imasen, Isuzu, Jonan, Mazda, Mitsubishi Motors, Nissan, NSK Steering Systems, Renault, Subaru, Suzuki, Toyota, VW Group, Webasto.												
Main automotive products:	Mitsuba produces a wide range of products for improved automobile safety and comfort through an enhanced field-of-vision, convenience, comfort, communication, and drive control. Core products are electrical components for 4-wheeled vehicles												
Main automotive competitors:	n.a.												
Sources:	Company Information												
Annotations:	*Estimations												

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates							
97 ▲ (99)	 Cooper Tire & Rubber Company 701 Lima Avenue Findlay Ohio 45840 USA www.coopertire.com FY ended: Dec, 31		in figures only:	in figures:	In % of Total Sales:	Americas Tire	International Tire	Eliminations					
			Mio US\$ 2019	2,753	2,753	100.0%	2,354	534	-135				
			Mio US\$ 2018	2,808	2,808	100.0%	2,363	641	-196				
			Mio US\$ 2017	2,855	2,855	100.0%	2,417	619	-181				
Global Footprint	Employees	Regional Sales		Board									
Total:	2019: 8,720 2018: 9,027	2,753 Mio US\$	100.0%	Christopher J. Eperjesy: Senior Vice President and CFO; Bradley E. Hughes: President; CEO and Director President; Stephen Zamansky: Senior Vice President, General Counsel and Secretary Contact: http://us.coopertire.com/about-us/contact-us Annual Report: https://investors.coopertire.com/Financials Press Releases: https://coopertire.com/news									
Automotive:		9,027	2,753 Mio US\$	100.0%									
Americas:		n.a.	n.a.	n.a.									
NAFTA/North America:		n.a.	2,176 Mio US\$	79.0%									
South America:		n.a.	n.a.	n.a.									
China:		n.a.	n.a.	n.a.									
Others:		n.a.	577 Mio US\$	21.0%									
Europe:		n.a.	n.a.	n.a.									
Further Information													
Company profile:	Company profile: Cooper Tire&Rubber Company with its subsidiaries is a leading manufacturer and marketer of replacement tires. It is the fourth largest tire manufacturer in North America. Cooper specializes in the design, manufacture, marketing and sales of passenger car and light truck tires. Cooper and its subsidiaries also sell medium truck, motorcycle and racing tires. The Company is organized into four business segments: North America, Latin America, Europe and Asia. Each segment is managed separately. Cooper Tire&Rubber Company was incorporated in the state of Delaware in 1930 as the successor to a business originally founded in 1914. It is based in Findlay, Ohio.												
Revenue split:	The Company's products are sold globally, primarily in the replacement tire market to independent tire dealers, wholesale distributors, regional and national retail tire chains and large retail chains that sell tires as well as other automotive products. The Americas Tire Operations segment manufactures and markets passenger car and light truck tires, primarily for sale in the U.S. replacement market. The segment had a market share in 2019 of approximately 10 percent of all passenger car and light truck replacement tire sales in the U.S. The International Tire Operations segment is the combination of the Europe and Asia operating segments.												
Sites (production/R&D):	Cooper and its family of companies currently operate in 15 countries, including 10 manufacturing facilities and 21 distribution centers.												
R&D facts:	Research and development costs amounted to approximately \$69,928, \$64,007 million, \$59,869 million during 2019, 2018, 2017 respectively.												
Main Automotive Customers:	Automotive aftermarket.												
Main Automotive products:	The Company specializes in the design, manufacture, marketing and sales of passenger car, light truck, medium truck, motorcycle and racing tires.												
Main automotive competitors:	Bridgestone Corporation, Goodyear Tire & Rubber Company and Groupe Michelin.												
Sources:	Annual Report												

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Automotive Division	Industrial Division				
98	 AB SKF Hornsgatan 1, Göteborg, Sweden www.skf.com FY ended: Dec, 31										
			Mio US\$ 2019	9,092	2,581	28.4%	2,581	6,511			
			Mio US\$ 2018	9,857	2,899	30.0%	2,899	6,968			
			Mio US\$ 2017	8,863	2,767	30.9%	2,767	6,196			
			Mio SEK 2019	86,013	24,416	28.4%	24,416	61,597			
			Mio SEK 2018	85,713	25,210	30.0%	25,210	60,593			
		Mio SEK 2017	77,938	24,063	30.9%	24,063	53,875				
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2019: 43,360 2018: 44,482	86,013 Mio SEK		100% Alrik Danielson: President and CEO; Niclas Rosenlew: CFO and Senior Vice President; Bernd Stephan: President, Automotive and Aerospace; John Schmidt: President, Industrial Sales Americas; Erik Nelander: President, Industrial Sales Europe; Patrick Tong: President, Industrial Sales Asia;						
	Automotive:	n.a.	24,416 Mio SEK	38.4%							
	Americas:	8,820	25,311 Mio SEK	29.4%							
	NAFTA/North America*:	5,904	20,645 Mio SEK	24.0%							
	Asia-Pacific:	11,452	24,865 Mio SEK	28.9%							
	Middle East & Africa:	452	2,264 Mio SEK	2.6%							
	Latin America:	2,916	4,666 Mio SEK	5.4%							
	Europe:	20,835	33,573 Mio SEK	39.0%							
	therefrom Sweden:	2,673	2,000 Mio SEK	2.3%							
	Further Information										
	Company profile:	SKF was founded in 1907 and is a leading global supplier of bearings, seals, mechatronics, lubrication systems, and services which include technical support, maintenance and reliability services, engineering consulting and training. SKF is represented in more than 130 countries and has around 17,000 distributor locations worldwide.									
	Revenue split:	In 2019, net sales amounted to MSEK 86,013 corresponding to an increase of 0.4% compared to 2018. Net sales 2019 by customer industry Automotive: Light vehicles 53%; Trucks 19%; Vehicle aftermarket 28%. Net sales Automotive total: Light vehicles 16%; Trucks 6%; Vehicle aftermarket 8%. Net sales Automotive by geographic area: Europe 44%; North America 18%; Latin America 11%; Asia and Pacific 27%; Middle East and Africa 0%.									
	Sites (production/R&D):	103 manufacturing sites in 130 countries and 15 technical centers around the world.									
	R&D facts:	Research and development expenditure, excluding developing IT solutions, in 2019 totalled MSEK 2,691 (2,591), corresponding to 3.1% (3.0) of annual sales. 2018: MSEK 2,591 (2,395), corresponding to 3.0% (3.1) of annual sales.									
	Main automotive Customers:	All major automotive manufacturers.									
	Main automotive products:	SKF provides customized bearings, seals and related products for wheel-end, driveline, engine, e-powertrain, suspension and steering applications to manufacturers of cars, light and heavy trucks, trailers, buses and two-wheelers. The vehicle aftermarket is supplied with spare parts, both directly and indirectly through a network of more than 10,000 distributors.									
	Main automotive competitors:	Eg. Schaeffler Group, Timken, NSK, NTN, JTEKT, Ijjin, C&U and Wanxiang Qianchao.									
	Sources:	Annual Report, Company Information									
	Annotations:	*incl. Mexico									

Rank	Company	Currencies	Total Sales	Automotive Sales		Names and Sales of Business Units/ Divisions/Main Automotive Affiliates					
			in figures only:	in figures:	in % of Total Sales:	Automotive	Architectural	Technical Glass	Others		
99	 Nippon Sheet Glass Co., Ltd. (incl. Pilkington Group) 1-7, Kaigan 2-chome Minato-ku, Tokyo 105-8552 Tokyo-to Japan www.nsggroup.net FY ended: March, 31										
			Mio US\$ 2019/20	5,102	2,577	50.5%	2,577	2,144	368	13	
			Mio US\$ 2018/19	5,550	2,850	51.3%	2,850	2,240	445	15	
			Mio US\$ 2017/18	5,387	2,789	51.8%	2,789*	2,156*	432*	10*	
			Mio Yen/¥ 2019/20	556,178	280,977	50.5%	280,977	233,687	40,143	1,371	
			Mio Yen/¥ 2018/19	612,789	314,645	51.3%	314,645	247,348	49,106	1,690	
		Mio Yen/¥ 2017/18	603,852	312,681	51.8%	312,681*	241,678*	48,420*	1,078*		
	Global Footprint	Employees	Regional Sales		Board						
	Total:	2020: 27,000 2019: 27,000	556,178 Mio ¥		100.0% Representative Executive Officers: Shigeki Mori (CEO), Clemens Miller (COO), Kenichi Morooka (CFO); Senior Executive Officers: Tony Fradgley, Koichi Hiroyoshi, Satoshi Ishino, Hiroshi Nishikawa, Jochen Settlemayer, Phil Wilkinson; Executive Officers: Tim Bolas, John Mercer, Mike Greenall, Yutaka Nakashima, Hiroshi Kishimoto, Iain Smith, Shiro Kobayashi, Milena Stanisci						
	Automotive:	n.a.	280,977 Mio ¥	50.5%							
	Americas:	n.a.	150,647 Mio ¥	27.1%							
	NAFTA/North America:	n.a.	n.a.	n.a.							
	South America:	n.a.	n.a.	n.a.							
	Asia-Pacific:	n.a.	190,953 Mio ¥	34.3%							
	Japan:	n.a.	n.a.	n.a.							
	Europe:	n.a.	214,578 Mio ¥	38.6%							
	Further Information										
	Company profile:	The NSG Group is one of the world's leading manufacturers of glass and glazing systems operating in three main sectors: Architectural, Automotive and Technical Glass. Founded in 1918, NSG acquired the leading UK-based glass manufacturer Pilkington plc in June 2006.									
	Revenue split:	The Group's business segments cover three core product sectors: Architectural, Automotive and Technical Glass. Automotive, with 51 percent of Group sales, recorded sales of ¥ 280,977 million (4Q FY2019: ¥ 314,645 million) and an operating profit of ¥ 6,100 million (4Q FY2019: ¥ 15,118 million). Europe represents 43 percent of the Group's automotive sales. In Asia, representing 24 percent of the Group's automotive sales, revenues were below the previous year, and profits also declined. In Japan, revenues were below the previous year. In the Americas, representing 33 percent of the Group's automotive sales, revenues fell due to the translational impact of foreign exchange movements and weakening market conditions particularly towards the end of the year with a significant impact from the COVID-19 pandemic. 38 percent of the Group's sales are in Europe, 35 percent in Asia including Japan and 27 percent in Americas.									
	Sites (production/R&D):	The enlarged company has manufacturing operations in 27 countries and sales in more than 100 countries. 21 Automotive plants are located in 14 countries. NSG purchases materials, goods and services from over 20,000 suppliers worldwide.									
	R&D facts:	The NSG Group's Research and Development (R&D) programs of are focused on the development of advanced glass and glazing technologies. R&D expenditure: ¥9.0 million in FY20 (Automotive: ¥2.6 million), ¥9.4 million in FY19, ¥9.1 million in FY18, ¥8.47 million in FY17.									
	Main automotive products:	Automotive supplies a wide range of automotive glazing for new vehicles and for replacement markets, offering full systems capability to customers, from initial design to final product. The Group's products include advanced solar control glass for passenger comfort, glass heating systems to control condensation and icing, security glazing and glazing systems, including encapsulations, extrusions and components added after basic manufacture. More Automotive products: Solar Control Glazing, Glazing Systems, Integrated Antennas.									
	Main automotive competitors:	E. g. Asahi Glass, Cardinal, Fuyao, Guardian Industries, PPG, Saint Gobain, Visteon, Vitro									
	Sources:	Company Information									

Rank	Company	Currencies	Total Sales	Automotive Sales	Names and Sales of Business Units/ Divisions/Main Automotive Affiliates									
100 (94)	 Tachi-S Co., Ltd. 3-3-7, Matsubara-cho Akishima Tokyo 196-8611 Japan www.tachi-s.co.jp FY ended: March, 31		in figures only:	in figures: in % of Total Sales:	Automotive seats & components Others									
			Mio US\$ 2019/20	2,590	2,569	99.2%	2,569	21						
			Mio US\$ 2018/19	2,994	2,970	99.2%	2,970	24						
			Mio US\$ 2017/18	2,636	2,615	99.2%	2,615	21						
			Mio Yen/¥ 2019/20	282,302	280,043	99.2%	280,043	2,259						
			Mio Yen/¥ 2018/19	330,530	327,885	99.2%	327,885	2,645						
			Mio Yen/¥ 2017/18	295,470	293,106	99.2%	293,106	2,364						
	Global Footprint	Employees	Regional Sales		Board									
	Total:	2019: 13,750 2018: 13,265		282,302Mio ¥	100.0%	Representative Director Chairman & CEO: Taro Nakayama; Representative Director President & COO: Yuichiro Yamamoto; Director Executive Managing Officers: Kunio Arishige, Kazumi Tamura, Atsushi Komatsu; Executive Managing Officers: Sumio Ono, Gonzalo Esparza, Shuichi Matsunaga, Takao Itou, Kazuya Shishido, Masao Saitou, Hideaki Igawa, Yoshiaki Kubo, Shigeo Komatsu, Akiyoshi Murakami								
	Automotive:		n.a.	280,043 Mio ¥	92.2%	Contact: https://tachi-s-s.cms2.jp/en/en_contact.html Press Releases: http://www.tachi-s.co.jp/en/en_shareholder/en_ir_news.html Annual Report: http://www.tachi-s.co.jp/en/en_shareholder/en_ir.html								
	Americas:		n.a.	101,220 Mio ¥	35.9%									
	NAFTA/North America:		n.a.	43,591 Mio ¥	15.4%									
	South America:		n.a.	57,629 Mio ¥	20.4%									
	Asia-Pacific:		n.a.	48,298 Mio ¥	17.1%									
	Japan:		n.a.	127,583 Mio ¥	45.2%									
	Europe:		n.a.	1,671 Mio ¥	0.6%									
	Germany:		n.a.	3,525 Mio ¥	1.2%									
	Further Information													
	Company profile:	The Company was established in Apr. 1954 as Tachikawa Spring Co., Ltd. in Tachikawa-shi, Tokyo. Tachi-S Co., Ltd. operates in one industry segment: The production and sale of automotive seats and seat components. Tachi-S works with major automakers as an independent seat maker, delivering 2.4 million seats to the global market each year.												
	Revenue split:	n.a.												
	Sites (production/R&D):	With 8 locations in Japan and about 40 affiliates, Tachi-S actively participates with 5,000 suppliers worldwide.												
	R&D facts:	The Development Centers develop products for the global market at five main locations. R&D costs FY 2020: ¥ 5,400 million (FY 2019: ¥ 4,500 million, FY 2018: ¥ 4,600 million, FY 2017: ¥ 4,100 million).												
	Main automotive Customers:	Adient GK, Hino Motors, Ltd., Honda, Mitsubishi Motors Corporation, NHK Spring, Nissan, Toyota, TS Tech. Main Business Partner: Adient, Inc., Isringhausen GmbH & Co. KG												
	Main automotive products:	Tachi-S produces seats for individual automakers.												
	Main automotive competitors:	E. g. Delphi, Faurecia, Intier Automotive, Johnson Controls, Lear, Toyota Boshoku, TS Tech and Visteon Corporation North American seat systems market; Johnson Controls and Lear, Intier Automotive (the automotive interior segment of Magna International Inc.) and Faurecia. Europe: Johnson Controls, Lear and Faurecia. Asia: Johnson Controls, Lear, TS Tech and Toyota Boshoku etc												
	Sources:	Company Informations, Press Releases												
	Annotations:													

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Wechselkurse

Alle Wechselkurse, wenn nicht anders angegeben, sind Jahresdurchschnittskurse* der Federal Reserve Bank of New York.

EUR (Euro, €) / USD (\$):

2019: 1 EUR = 1.1194 USD, 1 USD = 0.8933 EUR;
2018: 1 EUR = 1.1817 USD, 1 USD = 0.8899 EUR

JPY (Yen, ¥) / USD (\$):

2019: 100 JPY = 0.91726 USD, 1 USD = 109.02 JPY;
2018: 100 JPY = 0.90579 USD, 1 USD = 112.10 JPY;

CNY (RMB) / USD (\$):

2019: 100 CNY = 14.476 USD, 1 USD = 6.9081 CNY;
2018: 100 CNY = 15.138 USD, 1 USD = 6.6090 CNY;

GBP (Pound, £) / USD (\$):

2019: 1 GBP = 1.2768 USD, 1 USD = 0.7832 GBP;
2018: 1 GBP = 1.3363 USD, 1 USD = 0.7843 GBP;

SEK / USD (\$):

2019: 100 SEK = 12.768 USD, 1 USD = 7.8321 SEK;
2018: 100 SEK = 11.501 USD, 1 USD = 8.6945 SEK;

CAD / USD (\$):

2019: 1 CAD = 0.7536 USD, 1 USD = 1.3269 CAD;
2018: 1 CAD = 0.7718 USD, 1 USD = 1.2957 CAD;

KRW (Won) / USD (\$):

2019: 1.000 KRW = 0.8577 USD, 1 USD = 1.16580 KRW;
2018: 1.000 KRW = 0.9096 USD, 1 USD = 1.099.29 KRW;

MXN (Mex. Peso) / USD (\$):

2019: 100 MXN = 5.197 USD, 1 USD = 19.247 MXN;
2018: 100 MXN = 5.203 USD, 1 USD = 19.218 MXN;

BRL (Bras. Real) / USD (\$):

2019: 1 BRL = 0.2535 USD, 1 USD = 3.9440 BRL;
2018: 1 BRL = 0.2739 USD, 1 USD = 3.3513 BRL;

* Annual average exchange rates = averages of daily noon buying rates

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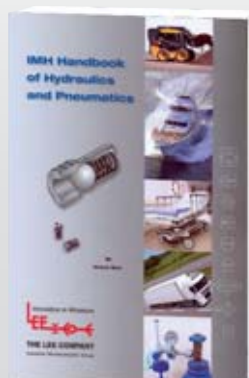
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