

Index

Table of Contents

Table of Contents i

List of Figuresvii

Executive summary 1

1 Commercial vehicle fleets in the Americas 3

 1.1 The North American commercial vehicle market 3

 1.1.1 Registrations of commercial vehicles GVW 3–8 3

 1.1.2 Manufacturer market shares 5

 1.1.3 Ownership structure 6

 1.1.4 Trailers 10

 1.2 The Latin American commercial vehicle market 11

 1.2.1 Registrations of commercial vehicles 11

 1.2.2 Manufacturer market shares 13

2 Fleet management solutions 17

 2.1 Fleet management infrastructure 17

 2.1.1 Vehicle segment 18

 2.1.2 GNSS segment 22

 2.1.3 Network segment 22

 2.1.4 Backoffice segment 26

 2.2 Vehicle management 27

 2.2.1 Vehicle diagnostics and maintenance planning 27

 2.2.2 Security tracking 28

 2.2.3 Tire pressure monitoring systems 29

 2.2.4 Fuel card integration and reporting 30

 2.3 Driver management 34

 2.3.1 Driving data registration and analysis 34

 2.3.2 Video-based driver monitoring 34

 2.3.3 Eco-driving schemes 35

 2.3.4 Insurance risk management 35

2.4	Operations management.....	36
2.4.1	Routing and navigation	36
2.4.2	Transport management.....	37
2.4.3	Mobile workforce management	38
2.5	Regulatory compliance and reporting.....	38
2.5.1	CSA – Compliance, Safety, Accountability	39
2.5.2	Hours-of-Service and electronic logging devices	40
2.5.3	Fuel tax reporting	44
2.5.4	Distracted driving	45
2.5.5	Proposed anti-theft systems in Brazil.....	45
2.5.6	Other applications	46
2.6	Business models	47
3	Market forecasts and trends	51
3.1	Market analysis.....	51
3.1.1	Installed base and unit shipments – North America and Latin America	51
3.1.2	Regional markets	53
3.1.3	Vendor market shares	54
3.1.4	Trailer telematics	57
3.1.5	Construction equipment telematics	58
3.2	Market drivers and barriers.....	60
3.2.1	Macroeconomic environment	61
3.2.2	Regulatory environment	62
3.2.3	Competitive environment	64
3.2.4	Technology environment	65
3.3	Value chain analysis	66
3.3.1	Telematics industry players.....	66
3.3.2	Automotive industry players.....	71
3.3.3	Telecom industry players	72
3.3.4	IT industry players	75
3.4	Future industry trends	76
3.4.1	Fleet telematics remains a high-pace IoT market favoured by multiple trends ..	76
3.4.2	COVID-19 hits differently across sectors, spurs collaboration	77

- 3.4.3 Vehicle OEMs and aftermarket providers partner for factory-installed telematics. 77
- 3.4.4 Industry consolidation fosters emergence of leading global telematics giants . 78
- 3.4.5 Fuel card integration extends the capabilities of fleet telematics 79
- 3.4.6 Leading tire manufacturers heavily involved in the fleet telematics space 80
- 3.4.7 Hardwired, mobile and hybrid telematics systems to co-exist 82
- 3.4.8 The FMCSA now lists more than 600 self-certified ELDs from diverse players.. 83
- 3.4.9 Upselling of value-added services to drive uptake beyond the ELD basics..... 86
- 3.4.10 Video-based solutions continue to permeate the fleet market 86
- 3.4.11 Fleet insurance telematics is an opportunity to reduce fleet risks..... 88
- 3.4.12 The Internet of Transportation Things expands the addressable market..... 90
- 4 OEM products and strategies 93
 - 4.1 Daimler Group 93
 - 4.2 Ford 104
 - 4.3 General Motors 108
 - 4.4 Hino Trucks..... 110
 - 4.5 Iveco 111
 - 4.6 MAN Latin America 114
 - 4.7 Navistar 118
 - 4.8 PACCAR..... 120
 - 4.9 Scania 125
 - 4.10 Volvo Group..... 128
- 5 International aftermarket solution providers 141
 - 5.1 Ctrack (Inseego) 141
 - 5.2 Fleet Complete 144
 - 5.3 Garmin and partners..... 149
 - 5.4 Geotab 152
 - 5.5 Gurtam..... 159
 - 5.6 KORE Position Logic 161
 - 5.7 MiX Telematics..... 164
 - 5.8 OmnitracS 170
 - 5.9 Teletrac Navman..... 179
 - 5.10 Trimble..... 184

5.11	Verizon Connect	191
5.12	Webfleet Solutions (Bridgestone).....	200
6	Regional aftermarket solution providers.....	205
6.1	North America.....	205
6.1.1	Azuga	205
6.1.2	CalAmp.....	207
6.1.3	Certified Tracking Solutions.....	212
6.1.4	Connexas Group (AddSecure).....	213
6.1.5	Coretex	215
6.1.6	CyntrX (Radius Payment Solutions).....	218
6.1.7	Donlen	218
6.1.8	EROAD	219
6.1.9	FieldLogix.....	223
6.1.10	Fleeteye.....	225
6.1.11	Fleet Freedom	225
6.1.12	Fleetilla	226
6.1.13	Forward Thinking Systems.....	228
6.1.14	GPS Insight	229
6.1.15	GPS Trackit	231
6.1.16	GreenRoad	232
6.1.17	IntelliShift.....	234
6.1.18	ISAAC Instruments	236
6.1.19	J. J. Keller	238
6.1.20	KeepTruckin	240
6.1.21	Linxup	242
6.1.22	Lytx	245
6.1.23	NexTraq (Michelin)	249
6.1.24	ORBCOMM.....	252
6.1.25	Pedigree Technologies	258
6.1.26	Platform Science	259
6.1.27	Positioning Universal.....	261
6.1.28	PowerFleet.....	263

6.1.29 Quartix 267

6.1.30 RAM Tracking 267

6.1.31 Rand McNally 268

6.1.32 Samsara 271

6.1.33 SkyBitz (AMETEK) 275

6.1.34 Spireon 277

6.1.35 Vecima Networks 279

6.1.36 WEX 280

6.1.37 Zonar Systems (Continental) 281

6.2 Latin America 286

6.2.1 Autotrak 287

6.2.2 CarrierWeb 290

6.2.3 Copiloto Satelital (Michelin) 292

6.2.4 Encontract 294

6.2.5 FleTrack 294

6.2.6 Ful-Mar 295

6.2.7 Global Track 295

6.2.8 GPS Chile 297

6.2.9 GPS7000 298

6.2.10 Grupo UDA 298

6.2.11 Grupo Ultra (ULTRACK) 299

6.2.12 Hawk GPS 300

6.2.13 Ituran 300

6.2.14 Locatelia 302

6.2.15 Location World 303

6.2.16 Maxtrack 304

6.2.17 Omnilink (Show Tecnologia) 305

6.2.18 OnixSat 307

6.2.19 Optimus Fleet 309

6.2.20 Pósitron (Stoneridge) 311

6.2.21 Rastreo Satelital 312

6.2.22 Redd 313

6.2.23 Ruptela 313

6.2.24 Sascar (Michelin)..... 315

6.2.25 Satrack 318

6.2.26 SHERLOG Technology 319

6.2.27 SIGhRA..... 321

6.2.28 Soltrack 322

6.2.29 Ubicamóvil..... 322

6.2.30 WideTech 324

6.2.31 Wisetrack..... 325

Glossary 327

Index

List of Figures

Figure 1.1: Registrations of GVW 3–8 vehicles (US 2016) 4

Figure 1.2: Registrations of GVW 3–8 vehicles (Canada 2016)..... 5

Figure 1.3: Commercial vehicle manufacturer market shares GVW 3–8 (US 2014) 6

Figure 1.4: Private ownership and business uses of vehicles (US 2013)..... 7

Figure 1.5: Distribution of new GVW 3–8 CVs by fleet size (US 2013) 8

Figure 1.6: Ten largest commercial fleets operated by US companies (2020) 9

Figure 1.7: Trailers in use (North America 2019) 10

Figure 1.8: Top trailer manufacturers (North America 2019)..... 11

Figure 1.9: CVs in operation and new registrations (Latin America 2014) 12

Figure 1.10: Light commercial vehicle manufacturer statistics (Brazil 2019) 13

Figure 1.11: Heavy truck manufacturer statistics (Brazil 2019) 14

Figure 2.1: Fleet management infrastructure overview 18

Figure 2.2: Examples of FM device form factors 19

Figure 2.3: Data interfaces used by FM devices 21

Figure 2.4: Examples of peripherals connected to FM devices 21

Figure 2.5: Mobile network operators in the Americas (2020) 24

Figure 2.6: Top-10 cellular IoT connectivity providers in the Americas (Q4-2019) 25

Figure 2.7: Example of FM backoffice segment 27

Figure 2.8: Components of a tire pressure monitoring system 29

Figure 2.9: Examples of fuel cards 31

Figure 2.10: Fuel card transaction overview report 33

Figure 2.11: Overview of the FMCSA’s ELD mandate timeline 42

Figure 2.12: Timeline of the Canadian ELD rule 43

Figure 3.1: Fleet management shipments and penetration (North America 2019–2024) 52

Figure 3.2: Fleet management shipments and penetration (Latin America 2019–2024) 53

Figure 3.3: Top-25 fleet management providers, by installed base (Americas Q4-2019) 55

Figure 3.4: Trailer telematics shipments and penetration (Americas 2019–2024) 57

Figure 3.5: Top-5 trailer telematics providers, by installed base (Americas Q4-2019) 58

Figure 3.6: Three tiers of RUC West member states 63

Figure 3.7: Financial data for telematics industry players (2019)	67
Figure 3.8: Mergers and acquisitions in the fleet telematics sector (2018–2020)	70
Figure 3.9: Examples of fleet management offerings by mobile operators (2020)	74
Figure 3.10: ELDs from Blue Ink Technology, Stoneridge and KeepTruckin.....	84
Figure 3.11: Samsara’s dual-facing AI dash cam	87
Figure 4.1: The new Multimedia Cockpit	96
Figure 4.2: Vans Connect powered by Sascar	101
Figure 4.3: Ford Plug-In Modem kit	106
Figure 4.4: Ford Commercial Solutions’ Ford Telematics and Ford Data Services	107
Figure 4.5: PacLease’s PacTrac Telematics packages powered by Trimble.....	123
Figure 4.6: Scania Fleet Management app interface.....	127
Figure 5.1: Fleet Complete’s MGS800 device	145
Figure 5.2: Fleet Complete’s BigRoad app and DashLink ELD	146
Figure 5.3: Fleet Complete Vision integrated with fleet tracking	147
Figure 5.4: Garmin’s Fleet 790 fleet telematics tablet with integrated dash cam.....	150
Figure 5.5: Garmin’s Dash Cam Mini (DC Mini) and Dash Cam Tandem (DC Tandem)	151
Figure 5.6: The Geotab GO9 tracking device	153
Figure 5.7: MyGeotab fleet management software	154
Figure 5.8: Schematic overview of the Geotab OEM Data Platform.....	157
Figure 5.9: The Wialon Hosting web interface.....	159
Figure 5.10: KORE Position Logic’s backoffice interface	162
Figure 5.11: MiX Telematics’ Android-based 7” MiX Rovi II and RIBAS devices	167
Figure 5.12: Omnitracs’ Mobile Hours of Service Application.....	172
Figure 5.13: Omnitracs’ Critical Event Video	172
Figure 5.14: Omnitracs’ Route Planning and Execution Software	174
Figure 5.15: Omnitracs’ Unified Portal.....	175
Figure 5.16: Omnitracs’ telematics device range	176
Figure 5.17: Teletrac Navman DIRECTOR and DRIVE app suite	180
Figure 5.18: Teletrac Navman’s next-generation platform TN360.....	182
Figure 5.19: Mobile Gateway, Connected Gateway, ConnectedTablet and Display.5	187
Figure 5.20: Trimble’s Video Intelligence portal	189
Figure 5.21: Verizon Connect Fleet software interface	193

Figure 5.22: Verizon Connect Reveal software interfaces 194

Figure 5.23: Verizon Connect Reveal video recordings interface and dash cam 195

Figure 5.24: Verizon Connect’s Workforce software 196

Figure 5.25: WEBFLEET, LINK 530 and PRO 8275M TRUCK 202

Figure 6.1: Azuga’s offering including SafetyCam 207

Figure 6.2: Coretex Drive tablet interface 217

Figure 6.3: EROAD ELD interface on Ehubo2 220

Figure 6.4: EROAD Go+ truck routing interface running on a ruggedised tablet..... 221

Figure 6.5: EROAD Clarity dashcam 222

Figure 6.6: FieldLogix Apple Watch app..... 225

Figure 6.7: Forward Thinking Systems’ FleetCam vehicle camera system..... 228

Figure 6.8: GPS Insight’s software interfaces..... 230

Figure 6.9: GreenRoad software..... 233

Figure 6.10: Schematic overview of IntelliShift 235

Figure 6.11: ISAAC InMetrics recorder/gateway, InControl tablet and InView camera..... 237

Figure 6.12: J. J. Keller Dash Cam Pro & Encompass Video Event Management Solution .. 239

Figure 6.13: KeepTruckin web and mobile interface..... 240

Figure 6.14: KeepTruckin hardware – Asset Gateway, Smart Dashcam, Vehicle Gateway... 241

Figure 6.15: Linxup vehicle tracking backoffice interface..... 243

Figure 6.16: Lytx DriveCam Event Recorder..... 246

Figure 6.17: Lytx backoffice interface for fleet management services 247

Figure 6.18: The NexTraq Elogs solution for ELD compliance 251

Figure 6.19: The ORBCOMM Platform analytics and reporting solution..... 254

Figure 6.20: Platform Science driver tablet interface..... 260

Figure 6.21: Positioning Universal’s FJ1000 4G LTE CAT 1 Mobile Positioning Unit 262

Figure 6.22: PowerFleet’s LV-9000 265

Figure 6.23: Rand McNally’s ELD 50, DC 100, DC 200 and TND 750 269

Figure 6.24: Samsara’s VG34 Vehicle IoT Gateway 272

Figure 6.25: Samsara’s cloud-based interface 273

Figure 6.26: FleetLocate FL1 GPS tracking device and app for ELD and DVIR compliance. 278

Figure 6.27: Zonar’s device options – Connect Tablet, 2010 and Samsung Galaxy Tab..... 283

Figure 6.28: Autotracs Supervisor web portal 288

Figure 6.29: OnixSat's flagship product OnixSmart 2 308
Figure 6.30: Optimus Fleet platform 310
Figure 6.31: Ubicamóvil's software interface 323