# The Worldwide OEM, EMS and ODM Electronics Assembly Market in Historical Perspective

1992 - 2012

A Unique Chronology of Electronics Assembly for 20 Years

## **Excel Database Highlights**

- Product Segment Analysis
  - Automotive
  - Communications
  - Computers/Peripherals
  - Consumer Electronics
  - Industrial
  - Medical
  - Aerospace/Military
  - Other Transportation
- Industry Analysis
  - Assembly Revenue by OEM, EMS, ODM
  - Assembly Revenue by 45 Countries
  - Assembly Revenue by 48 Products

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A Technology Market Research Company

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## **Synopsis**

The worldwide electronics assembly market has experienced enormous growth over the last 20 years, nearly quadrupling in size to be approximately \$1.3 trillion dollars in terms of cost of goods sold (COGS) as of 2012. Yet, the growth in the trend to outsource production to EMS (electronic manufacturing service) and ODM (original design manufacturer) companies has been more dramatic, expanding at a compound annual growth rate of nearly 20 percent and today accounting for approximately 40 percent of all electronics manufacturing assembly.

New Venture Research (NVR) (and the previous owner Electronic Trend Publications) have tracked the electronics assembly industry for decades with its research reports that focus on all aspects of this industry. The Worldwide OEM, EMS and ODM Electronics Assembly Market in Historical Perspective, 1992 - 2012 is a peerless database that summarizes all electronics assembly on a worldwide basis. It has been developed by studying almost 300 leading OEM electronics companies and approximately 100 leading EMS/ODM firms in 48 different product categories and their manufacturing activities in 45 different countries.

The database provides production assembly of electronics products in four unique regions.

Americas (North, South, Central)
EMEA (Europe, Middle East, Africa)
APAC (Asia Pacific region)
ROW (Rest of the World)

The database also segments the worldwide electronics assembly value into seven major markets.

Automotive
Communications
Computers/Peripherals
Consumer Electronics
Industrial
Medical
Aerospace/Military/
Other Transportation

Trend analysis of at least 25 leading products (such commodities as mobile phones and computers) both in terms of units of production and COGS assembly value is provided by manufacturing supplier. Moreover, trend information about the migration of outsourced production from the Americas and EMEA to Asia, and especially China, is also summarized. *NVR* has been following the EMS market since it's first syndicated report in 1992, and this database provides the complete statistical figures of all reports over the last 20 years (each year starting in 1998) as well as in aggregate for convenient macro-analysis.

This unique database will provide you with detailed and comprehensive information on this significant and still-expanding market. The database is delivered by email as a single-user Excel file and sells for \$2,495. An extra single-user license is \$250 and a corporate license is \$1,000.

## **About the Author**

Randall Sherman, president of New Venture Research Corp., a California market research and business consulting firm focused on the EMS and OEM electronics manufacturing industries, serves as principal analyst for this database. Mr. Sherman has more than 20 years' experience in technology and business research. He began his career as a telecom network design engineer. He has held senior positions at various market research firms, including Creative Strategies and Frost and Sullivan. Mr. Sherman holds an MSEE from the University of Colorado and an MBA from the Edinburgh School of Business.

## **Electronics Assembly by Product and Country, 1992-2012**

#### **Automotive**

Engine Controls
Instrumentation
Safety Modules
Entertainment Devices
Total Automotive Summary

#### **Communications**

Mobile Phones
Infrastructure
Other Phones
Enterprise LANs
Wireless LANs
DSL/Cable Modems
Dial-up Modems
PBX/Key Systems
Carrier-Class
Other Communications
Total Communications Summary

## Computer/Peripherals

Notebooks
Desktops
Tablets
Servers
Workstations
ESS
Monitors
Printers
Handhelds/PDAs
E-Readers

**Total Computer Summary** 

## **Consumer Electronics**

Other Computer

Analog TV Digital TV MP3 Other Audio

Games
Set-Top Boxes
Camcorders
DVD/DVR/VCR
Digital Cameras
Personal Navigation

Other Consumer

**Total Consumer Summary** 

### Industrial

Process Control
Test & Measurement
Other Industrial
Clean Energy
Total Industrial Summary

### Medical

Monitoring/Test
Therapeutic
Diagnostics/Surgical
Total Medical Summary

## Aerospace/Military/Other

In-Flight Entertainment
Navigation Systems
Weapons
C3 Systems
Other Military
Other Aerospace/Other
Total Aerospace/Military/Other Summary

## **Americas**

Total Production Assembly Value by Country (Brazil, Canada, Mexico, USA, Rest of Americas)
Assembly Value by OEM, EMS, ODM

#### **EMEA**

Total Production Assembly Value by Country (Austria, Belgium, Bulgaria, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Lithuania, Morocco, Netherlands, Norway, Poland, Romania, Russia, Scotland, Slovakia, Spain, Sweden, Switzerland, Tunisia, Ukraine, Rest of the Europe)
Assembly Value by OEM, EMS, ODM

#### **APAC**

Total Production Assembly Value by Country (Australia, China, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam, Rest of Asia) Assembly Value by OEM, EMS, ODM

# Sample Worksheet of Data Contained in Spreadsheet for Year 2007

## **Worldwide Electronics Assembly Summary**

Worldwide Assembly Value (\$M)	2007	Total by Industry (\$M)	2007
Computer	299,251	Automotive	5,800
Communications	218,326	Communications	78,235
Consumer	220,631	Computer	92,111
Industrial	62,682	Consumer	44,717
Medical	38,248	Industrial	18,267
Automotive	74,861	Medical	12,472
Aviation/Defense/Other	44,729	Commercial Aviation	3,915
Total	958,728	Defense/Other	5,872
		Total	261,388
Total by Supplier (\$M)	2007		
OEM	631,488		
ODM	85,838	EMS Total by Industry (\$M)	2007
EMS	175,549	Automotive	4,912
MPU+DRAM	65,852	Communications	57,560
Total	958,728	Computer	50,927
		Consumer	28,223
		Industrial	16,276
Total by Region (\$M)	2007	Medical	10,534
Americas	51,854	Commercial Aviation	2,847
EMEA	41,681	Defense/Other	4,271
APAC	157,884	Total	175,549
ROW	9,969		,
Total	261,388		
		ODM Total by Industry (\$M)	2007
EMS Total by Region (\$M)	2007	Automotive	888
Americas	45,732	Communications	20,675
EMEA	37,420	Computer	41,185
APAC	84,561	Consumer	16,494
ROW	7,836	Industrial	1,991
Total	175,549	Medical	1,938
		Commercial Aviation	1,067
		Defense/Other	1,601
ODM Total by Region (\$M)	2007	Total	85,838
Americas	6,122		•
EMEA	4,260		
APAC	73,323		
ROW	2,133		
Total	85,838		

# Sample Worksheet of Data Contained in Spreadsheet for Year 2007

OEM Electronics Assembly by Produ	ct/Segment	Consumer Product Units (M)	<u>2007</u>
Communications Product Units (M)	<u> 2007</u>	Analog TVs	60
Cellular Handsets	1,144	Digital TVs	120
Other Phones	200	MP3 Players	98
DSL/Cable Modems	85	Other Audio	283
		Console Video Games	30
Communications Assembly Value (\$1	<u>M) 2007</u>	Set-Top Boxes Camcorders	110 17
Cellular Handsets	102,979	DVD Players	145
Cellular Infrastructure	34,384	Digital Cameras	122
Other Phones	8,295	Personal Navigation Devices	25
Enterprise LANs	15,561	Memory Cards	406
WLANs	3,995	Momenty Cardo	100
DSL/Cable Modems	5,298	Consumer Assembly Value (\$M)	2007
PBX/Other CPE	13,341	Analog TVs	7,459
Carrier-Class	27,541	Digital TVs	78,355
Other	6,932	MP3 Players	12,357
Total	218,326	Other Audio	12,280
Total	210,320	Console Video Games	10,294
Computer Draduct Unite (M)	2007	Set-Top Boxes	20,023
Computer Product Units (M)	<u>2007</u>	Camcorders	6,333
Notebook PCs	109.0	DVD Players	14,011
Desktop PCs	162.2	Digital Cameras	17,889
Servers	8.8	Personal Navigation	3,654
Workstations	3.0	Memory Cards	7,287
Enterprise Storage Systems	2.2	Other	30,688
Hard Disk Drives	401.1	Total	220,631
CD/DVD Drives	311.3		
Floppy Drives	380.0	Industrial Assembly Value (\$M)	<u>2007</u>
Monitors	208.2	Control/Processing	31,980
Printers	157.0	Test and Measurement	21,413
PDAs	19.0	Other Industrial	9,289
		Total Industrial	62,682
Computer Assembly Value (\$M)	<u>2007</u>	Medical Assembly Value (\$M)	2007
Notebook PCs	71,134	Medical Diagnostics	19,231
Desktop PCs	82,901	Therapeutic	8,755
Servers	36,288	Monitoring & Surgical	10,263
Workstations	7,568	Total	38,248
Enterprise Storage Systems	7,247	. Otta	00,2 :0
Flash Drives	6,787	Automotive Assembly Value (\$M)	<u>2007</u>
Monitors	35,360	Engine Control	23,712
Printers	19,952	Instruments	10,959
PDAs	4,389	Safety	25,440
Other	27,626	Entertainment	14,750
Total	299,251	Total	74,861

# Sample Worksheet of Data Contained in Spreadsheet for Year 2007

## **EMS/ODM Electronics Assembly by Product/Segment**

Total Communications (\$M)	2007	Total Computer (\$M)	2007
Enterprise LANs	9,789	Notebook PCs	19,507
DSL/Cable Modems	3,465	Desktop PCs	20,603
Cellular Handsets	29,151	Servers	16,729
Other Phones	2,840	Workstations	2,950
Wireless LANs	1,877	Enterprise Storage Systems	4,440
Cellular Infrastructure	13,701	Stand-Alone Monitors	7,444
PBX/Other CPE	4,034	Printers	13,125
Carrier-Class Switches/Routers	10,376	Handhelds	2,337
Other Telecom	3,002	Other Computer	4,977
Total	78,235	Total	92,111
EMS Communications (\$M)	2007	EMS Computer (\$M)	2007
Enterprise LANs	8,267	Notebook PCs	5,161
DSL/Cable Modems	647	Desktop PCs	5,368
Cellular Handsets	21,682	Servers	13,506
Other Phones	487	Workstations	2,818
Wireless LANs	288	Enterprise Storage Systems	4,359
Cellular Infrastructure	11,965	Stand-Alone Monitors	4,183
PBX/Other CPE	2,770	Printers	12,189
Carrier-Class Switches/Routers	8,941	Handhelds	1,474
Other Telecom	2,513	Other Computer	1,867
Total	57,560	Total	50,927
ODM Communications (\$M)	2007	ODM Computer (\$M)	2007
Enterprise LANs	1,522	Notebook PCs	14,346
DSL/Cable Modems	2,818	Desktop PCs	15,235
Cellular Handsets	7,469	Servers	3,223
Other Phones	2,353	Workstations	132
Wireless LANs	1,589	Enterprise Storage Systems	81
Cellular Infrastructure	1,735	Stand-Alone Monitors	3,260
PBX/Other CPE	1,263	Printers	936
Carrier-Class Switches/Routers	1,435	Handhelds	863
Other Telecom	489	Other Computer	3,110
Total	20,675	Total	41,185

## Sample Worksheet of Data Contained in Spreadsheet for Year 2007

## **EMS/ODM Electronics Assembly by Product/Segment**

Total Consumer (\$M)	2007		
Analog TVs	566	Total Industrial (\$M)	2007
Digital TVs	16,291	Control/Processing	5,189
MP3 Players	4,836	Test and Measurement	6,530
Other Audio	771	Other Industrial	6,548
Video Console Games	3,828	Total	18,267
Set-Top Boxes	5,869		
Camcorders	524		
DVD Players	1,691	EMS Industrial (\$M)	2007
Digital Cameras	3,681	Control/Processing	4,463
Personal Navigation	1,827	Test and Measurement	6,071
Other Consumer	4,833	Other Industrial	5,742
Total	44,717	Total	16,276
		ODM Industrial (\$M)	2007
EMS Consumer( \$M)	2007	Control/Processing	726
Analog TVs	196	Test and Measurement	459
Digital TVs	6,369	Other Industrial	806
MP3 Players	3,974	Total	1,991
Other Audio	530	Total	1,331
Video Console Games	1,849	Total Medical (\$M)	2007
Set-Top Boxes	5,700	Medical Diagnostics	8,047
Camcorders	231	Therapeutic	1,030
DVD Players	987	Monitoring and Surgical	3,394
Digital Cameras	3,534	Total	12,472
Personal Navigation	1,644	Total	12,712
Other Consumer	3,207	EMS Medical (\$M)	2007
Total	28,223	Medical Diagnostics	6,253
		Therapeutic	1,030
		Monitoring and Surgical	3,251
ODM Consumer (\$M)	2007	Total	10,534
Analog TVs	370	Total	10,554
Digital TVs	9,921	ODM Medical (\$M)	2007
MP3 Players	863	Medical Diagnostics	1,795
Other Audio	241	Therapeutic	1,795
Video Console Games	1,979	Monitoring and Surgical	143
Set-Top Boxes	169	Total	1,938
Camcorders	292	lotai	1,930
DVD Players	704		
Digital Cameras	147		
Personal Navigation	183		
Other Consumer	1,626		
Total	16,494		

# Sample Worksheet of Data Contained in Spreadsheet for Year 2007

## **EMS/ODM Electronics Assembly by Product/Segment**

		EMS	
Total Automotive (\$M)	2007	Commercial Aviation (\$M)	2007
Engine Control	-	In-Flight Entertainment	619
Instruments	859	Flight Navigation - Comm.	1,464
Safety	1,018	Other Aviation	764
Entertainment	3,922	<b>EMS Total Commercial Aviation</b>	2,847
Total	5,800		·
	2227	Military/Defense	
EMS Automotive (\$M)	2007	Flight Navigation - Mil.	1,475
Engine Control	859	Weapons/Combat	631
Instruments	1,018	C3	599
Safety	3,034	Other Transportation	1,566
Entertainment	4,912	<b>EMS Total Defense/Other</b>	4,271
Total	5,380		
		Total EMS Transportation	7,118
ODM Automotive (\$M)	2007		
Engine Control		ODM	
Instruments		Commercial Aviation (\$M)	2007
Safety		In-Flight Entertainment	19
Entertainment	888	Flight Navigation - Comm.	20
Total	888	Other Aviation	1,029
		<b>Total ODM Commercial Aviation</b>	1,067
Total Commercial Aviation (\$M)	2007		
In-Flight Entertainment	639	Military/Defense	
Flight Navigation - Comm	1,484	Flight Navigation - Mil.	1,300
Other Aviation	1,792	Weapons/Combat	-
<b>Total Commercial Aviation</b>	3,915	C3 '	6
		Other Transportation	294
		Total ODM Defense/Other	1,601
Military/Defense			,
Flight Navigation - Mil.	2,775	Total ODM Transporation	2,668
Weapons/Combat	631		_,,
C3	606		
Other Transportation	1,861		
Total Defense/Other	5,872		
Total Transportation	9,787		

# Sample Worksheet of Data Contained in Spreadsheet for Year 2007

EMS/ODM Electronics Assembly by Country/Region		EMS EMEA (\$M)	2007
		Austria	702
Total Americas (\$M)	2007	Belgium	808
Canada	3,799	Czech Republic	544
		Denmark	81
Mexico	17,156	England	3,341
USA	30,899	Estonia	481
Total	51,854	Finland	2,815
		France	3,525
		Germany	5,753
EMS Americas (\$M)	2007	Hungary	2,891
Canada	3,345	Ireland	2,932
Mexico	14,059	Italy	1,799
USA	•	Netherlands	1,571
	28,329	Poland	336
Total	45,732	Russia	210
		Scotland	2,213
		Slovakia	157
ODM Americas (\$M)	2007	Spain	973
Canada	455	Sweden	4,007
Mexico	3,098	Switzerland	838
USA	2,570	Rest of Europe	1,445
		Total	37,420
Total	6,122		
		ODM EMEA (\$M)	2007
		Belgium	41
Total EMEA (\$M)	2007	Czech Republic	174
Austria	702	England	239
Belgium	849	Finland	20
Czech Republic	718	Germany	2,548
Denmark	81	Hungary	171
England	3,580	Ireland	166
Estonia	481	Netherlands	95
		Poland	223
Finland	2,835	Russia	7
France	3,525	Scotland	138
Germany	8,301	Spain	59
Hungary	3,062	Sweden	9
Ireland	3,097	Rest of Europe	370
Italy	1,799	Total	4,260
Netherlands	1,666	Total ADAC (¢M)	2007
Poland	559	Total APAC (\$M)	2007
		China	94,107
Russia	217	Indonesia	773
Scotland	2,351	Japan	11,094
Slovakia	157	Korea Malaysia	4,190
Spain	1,032	Malaysia	6,785
Sweden	4,016	Philippines	2,042
Switzerland	838	Singapore	2,407
	1,815	Taiwan	26,394
Rest of Europe		Thailand	9,050
Total	41,681	Other Asia	1,041
		Total	157,884

# Partial List of Companies Profiled

<b>EMS/ODM Electronics Assembly by Country/Region</b>		Total ROW (\$M)	2007
		Australia	458
EMS APAC (\$M)	2007	Brazil	7,055
China	51,790	India	1,495
Indonesia	743	Israel	299
Japan	8,376	Puerto Rico	521
Korea	50		
Malaysia	6,765	Other ROW	142
Philippines	1,148	Total	9,969
Singapore	1,955		
Taiwan	3,727		
Thailand	9,015	EMS ROW (\$M)	2007
Other Asia	991	Australia	403
Total	84,561	Brazil	5,331
		India	1,151
ODM APAC (\$M)	2007	Israel	299
China	42,317	Puerto Rico	521
Indonesia	30	Other ROW	132
Japan	2,718	Total	7,836
Korea	4,140		•
Malaysia	20		
Philippines	894	ODM ROW (\$M)	2007
Singapore	452		
Taiwan	22,668	Australia	55
Thailand	35	Brazil	1,724
Other Asia	50	India	344
Total	73,323	Other ROW	10
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