

EXECUTIVE MARKET & TECHNOLOGY FORUM

A BUSINESS INTELLIGENCE PROGRAM FOR IPC MEMBERS

2006 – 2007 Industry Analysis and Forecast for Flexible Circuits in North America

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TABLE OF CONTENTS

FOREWORD	1
2007 EXECUTIVE FORUM STEERING COMMITTEE	2
SECTION 1 NORTH AMERICAN INDUSTRY TRENDS	
Flexible Circuit Production Volume in North America.....	4
Growth Rates of Flexible Circuit Production and Companies.....	5
Number of Flexible Circuit Producers in USA & Canada in 2007.....	6
SECTION 2 TRENDS IN MATERIALS	
Adhesive Versus Adhesiveless Materials.....	8
Adhesiveless Materials by Company.....	9
Market Share by Material Type for 2006 and Estimates of 2007.....	10
SECTION 3 TRENDS IN PRODUCT TYPES AND PRODUCTION	
Sales by Product Type.....	12
Growth by Product Type for 2005 to 2006 and Estimates for 2007.....	13
Type of Production: High-Volume, Quick-Turn and Prototype.....	14
Line Width and Spacing.....	15
SECTION 4 TRENDS IN VALUE-ADDED SERVICES	
Historical Value of Base Materials versus Components & Assembly Services.....	18
Value Added Services versus Bare Flexible Circuits as Percent of Sales in 2006.....	19
SECTION 5 ANALYSIS OF THE MARKET FOR FLEXIBLE CIRCUITS	
U.S. Flexible Circuit Market Size Estimate for 2006.....	21
Defining the Industry Markets for Printed Circuit Boards.....	22
Industry Markets Served by Flexible Circuit Producers.....	23
Industry Markets for Single- and Double-Sided Polyimide Applications.....	24
Industry Markets for Multilayer and Rigid-Flex Polyimide Applications.....	25
SECTION 6 U.S. IMPORTS AND EXPORTS	
Historical Trends in U.S. Imports of Flexible Circuits.....	27
Flexible Circuits Imports from Key Countries.....	28
Production Origin of Flexible Circuits Sold in the USA and Canada.....	29
Historical Trends in U.S. Exports of Flexible Circuits.....	30
Flexible Circuit Exports to Key Countries.....	31
Exports by Responding Companies in 2005 and 2006.....	32
SECTION 6 APPENDICES	
Survey Questionnaire.....	34
Annual Studies Sponsored by the Executive Forum in 2007.....	41

FOREWORD

The electronic interconnection industry includes manufacturers of electronic products and the printed circuit boards (PCBs) that are their foundation, electronics manufacturing services (EMS) companies, and suppliers of materials and equipment to those manufacturers. The mission of IPC-Association Connecting Electronics Industries is to support participants in this industry worldwide through programs to enhance competitive excellence and financial success. In 1975, the IPC board of directors formed the Technology Market Research Council (TMRC) which, in 2006, became the **Executive Market & Technology Forum**. The Executive Forum is the premier industry forum for the active exchange of information and data regarding the electronic interconnection industry and its supply chain.

The Executive Forum – led by a steering committee composed of members representing all segments of the industry – sponsors seven annual market research studies, including two commissioned studies, on markets, technologies or business issues of vital importance to the industry. The Executive Forum also publishes the acclaimed quarterly business report, *Supply Chain Tracker*, and the monthly *PCB/Semiconductor Industry Barometer*. The Executive Forum holds three major conferences each year in Asia, Europe and North America. At these conferences, industry experts present the latest market and technology trends, and participants have an opportunity to meet with colleagues, customers and suppliers to discuss the critical issues facing the industry. The conferences are open to Executive Forum members and non-members. The cost of these programs is subsidized by Executive Forum membership dues from participating companies.

This document is a product of the Executive Forum and is provided at no charge as a benefit of membership to Executive Forum members. The report is available to other IPC members for \$475 and to non-members for \$950. For more information about this report, please contact Ms. Sree Bhagwat, IPC's Market Research Manager, at 1-330-687-0999 or sreebhagwat@ipc.org. For information about the Executive Forum, please contact Ms. Sharon Starr, IPC's Director of Market Research at 1-847-597-2817 or sharonstarr@ipc.org, or visit IPC's website at www.ipc.org/ExecForum.

A Note about the Survey Sample

The information in this report is based on data provided by six producers of flexible circuits in the USA and Canada that participated in the IPC Flexible Circuit Annual Industry Survey. These companies produced US\$105 million of flexible circuits in 2006, approximately 19% of the estimated total North American flexible circuits industry.

The IPC and its members owe their thanks to the flexible circuit manufacturers who expended their time and effort to provide the extensive data for this report.

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SECTION 1

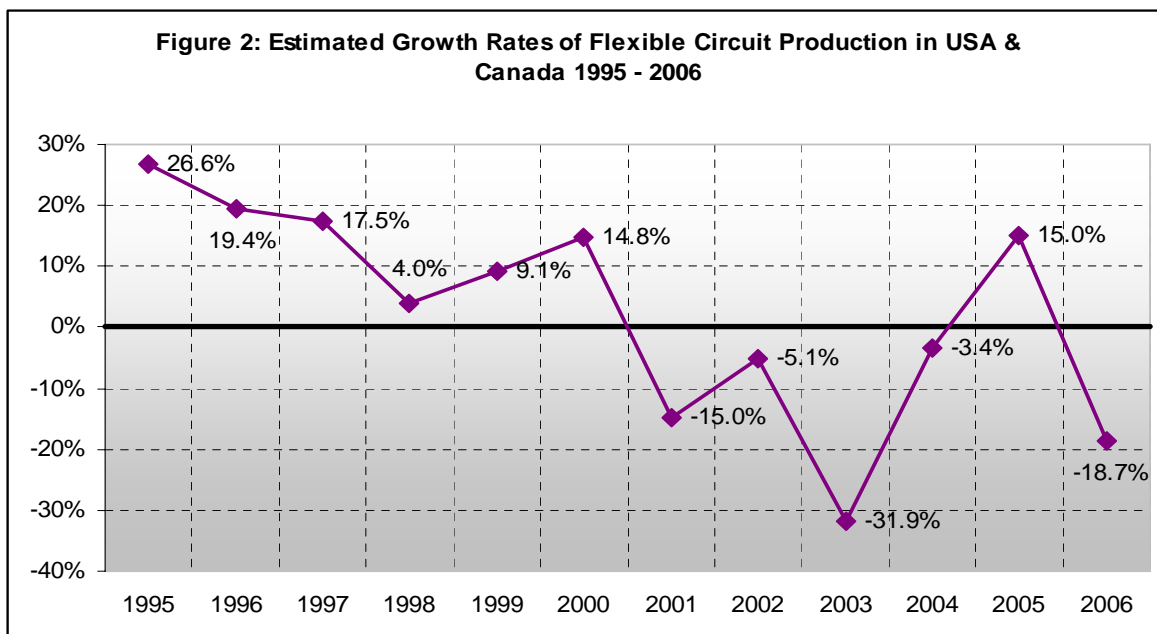
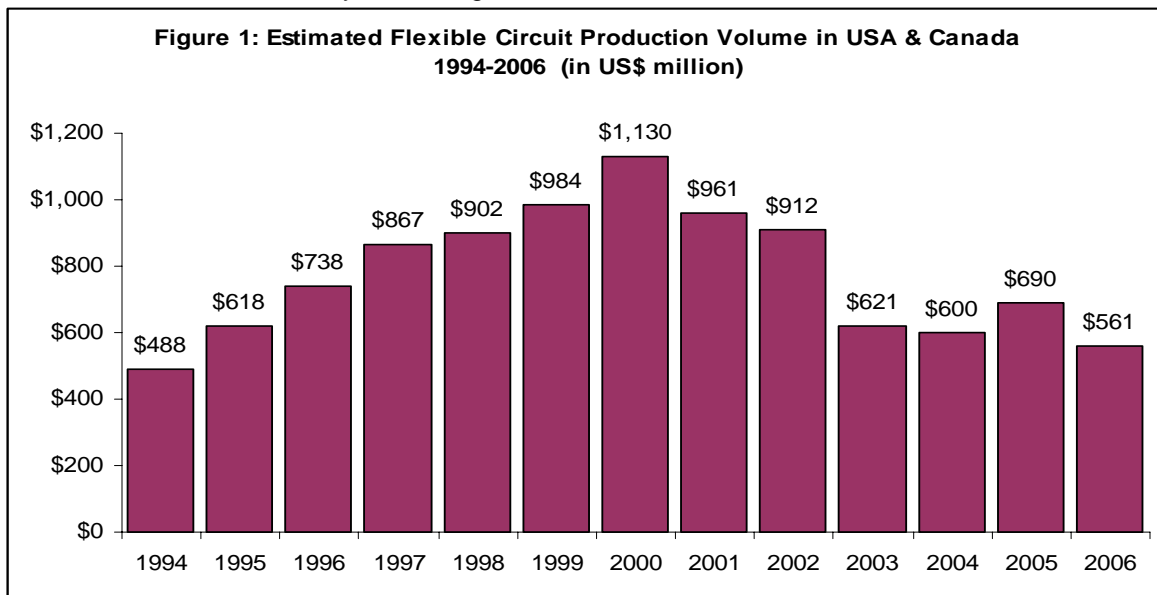
NORTH AMERICAN INDUSTRY TRENDS

- ◆ Flexible Circuit Production Volume in North America
- ◆ Growth Rates of Flexible Circuit Production and Companies
 - ◆ Number of Flexible Circuit Producers in USA & Canada

FLEXIBLE CIRCUIT PRODUCTION VOLUME IN NORTH AMERICA

Flexible circuit production in the USA and Canada grew from \$488 million in 1994 to \$1.1 billion in 2000, when it reached its peak. Since then, production in North America has decreased quite significantly. Flexible circuit production value in 2006 is estimated at \$561 million, just over the 1994 production level. Movement of flexible circuit production to Asia accounts for the decline in North American production from 2005 to 2006.

These estimates include assembly and other value-added services in addition to bare circuits because reliable data on bare circuit value is not available. It is becoming increasingly difficult for manufacturers to estimate the value of bare circuits when they are selling assembled circuits.



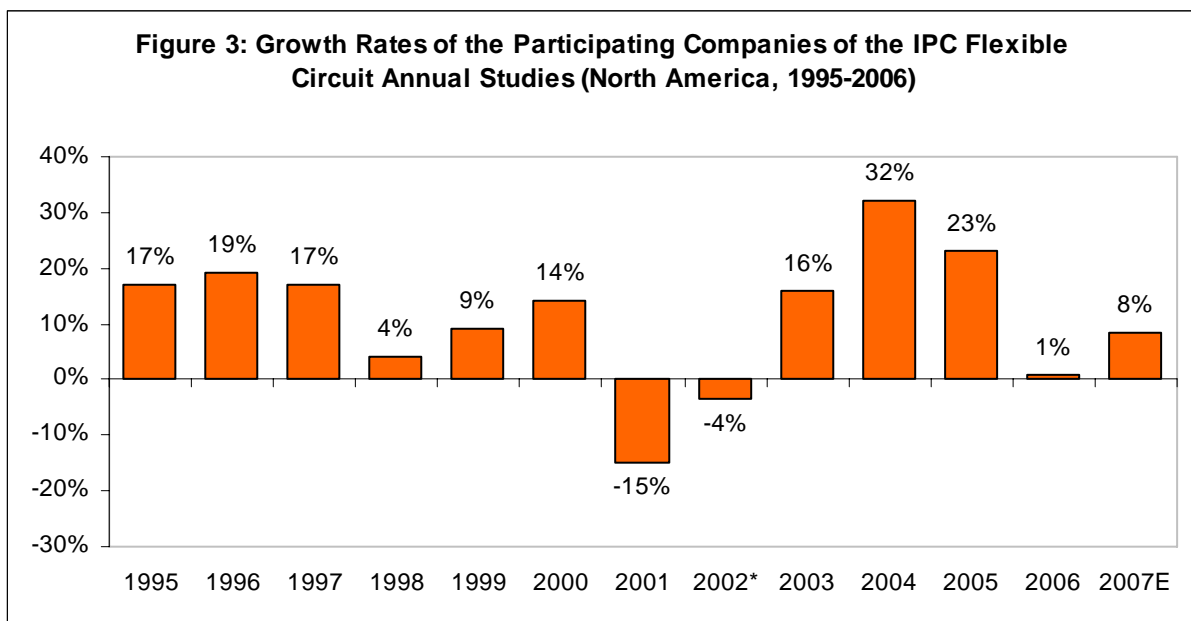
Source: IPC World PCB Production and Laminate Market, 1994-2006 Executive Market & Technology Forum

GROWTH RATES OF FLEXIBLE CIRCUIT PRODUCTION AND GROWTH OF COMPANIES IN THE INDUSTRY

There are two ways to look at growth in an industry: by the total size of the industry (e.g., total flexible circuit production in North America) and by the growth rates of individual companies in the industry. In the case of flexible circuits, these two views differ considerably. Companies in the industry have been experiencing double-digit growth in recent years, but the value of flex circuits produced in North America overall has declined due to movement of production to other regions.

Growth rates of total flexible circuit production in North America were positive from 1995 through 2000, accelerating in 1999 and 2000, but became negative from 2001 to 2004, as shown in Figure 2 on the preceding page. While North American production of flexible circuits declined an estimated 50% from 2000 to 2006 (see Figure 1), global production of flexible circuits during that time increased from \$3.88 billion in 2000 to an estimated \$7.3 billion in 2006.

Although flex circuit production in North America has declined, the companies in the region are growing. Since 1995, the participants in the IPC annual studies reported positive growth rates, except for 2001 and 2002 (See Figure 3). Participants in the 2006 IPC annual study reported an aggregate growth rate of 1% for 2006. These participants expect a growth rate of 8% in 2007. It should be noted that the survey sample differs for each annual study.



Sources:

IPC Analysis of the North American Flexible Circuits Industry 1995-2006, Executive Market & Technology Forum
IPC Monthly PCB Statistical Program, December 2002

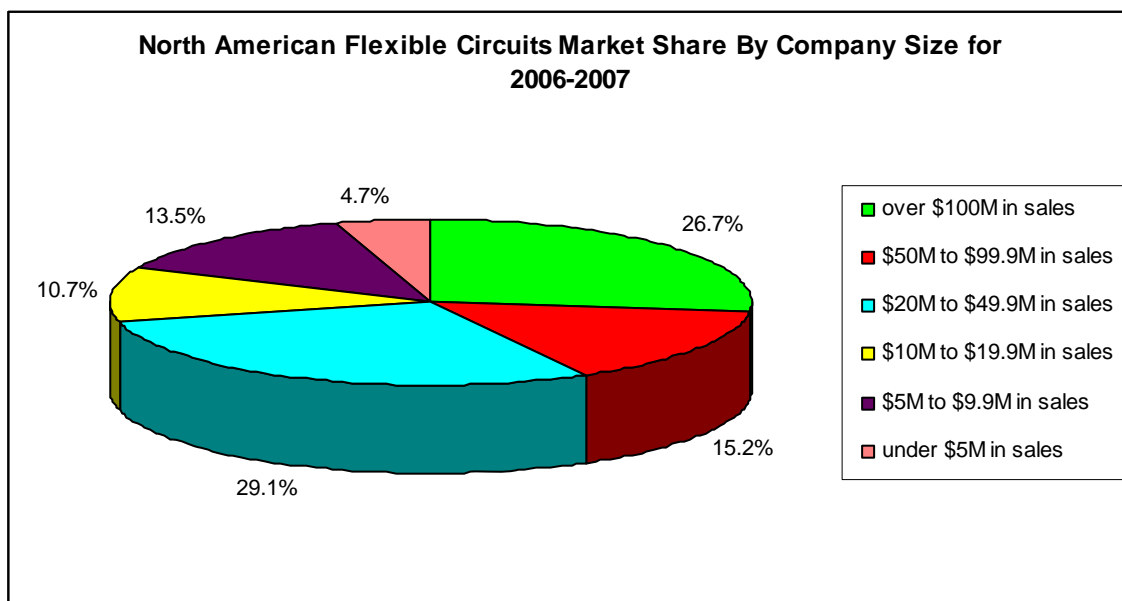
* The 2002 growth rate is based on data reported by flexible circuit fabricators participating in the IPC's PCB monthly survey, because insufficient data was collected from the annual survey for 2002.

NUMBER OF FLEXIBLE CIRCUIT PRODUCERS IN USA & CANADA IN 2006-2007 BY SIZE OF THE COMPANY

Flexible Circuit Fabricators in USA and Canada			
Sales Bracket	Number of Companies as of 2000	Number of Companies as of June 30, 2007	June 2007 (current) Market Share*
>\$100M	2	1	26.7%
\$50M - \$100M	3	2	15.2%
\$20M - \$49.9M	4	8	29.1%
\$10M - \$19.9M	4	6	10.7%
\$5M - \$9.9M	15	16	13.5%
<\$5M	42	20	4.7%
TOTAL	70	53	100.0%

* Due to rounding, percentages may not equal 100%

Source: Fabfile Online, www.fabfileonline.com



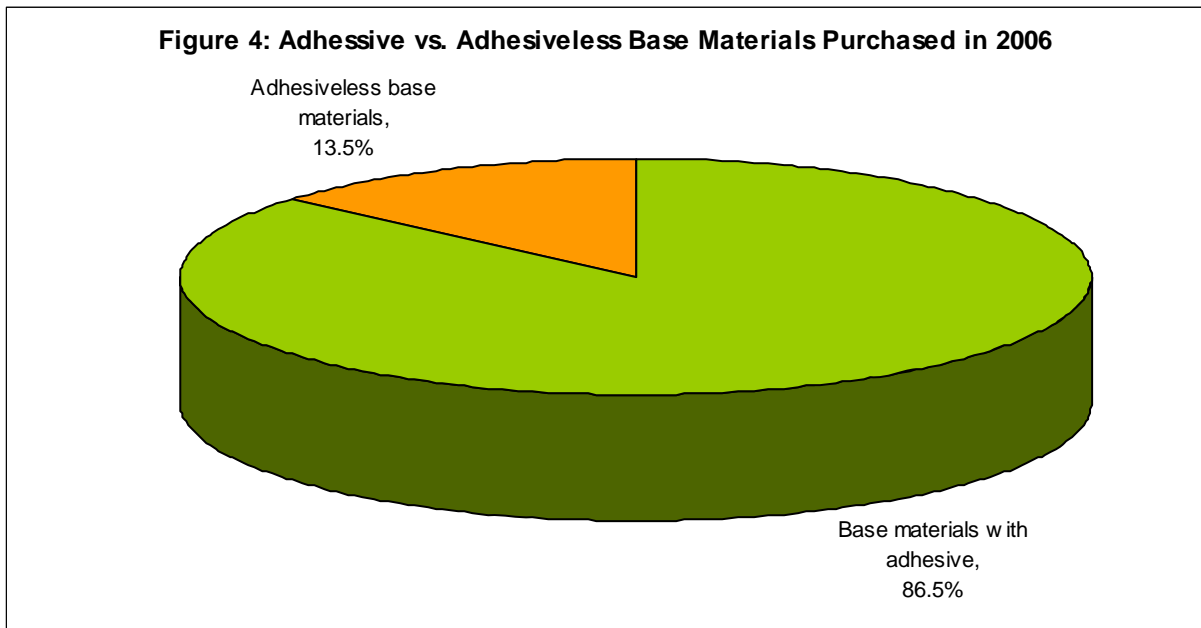
SECTION 2

TRENDS IN MATERIALS

- ◆ Adhesive Versus Adhesiveless Materials
 - ◆ Adhesiveless Materials by Company
 - ◆ Market Share by Material Type

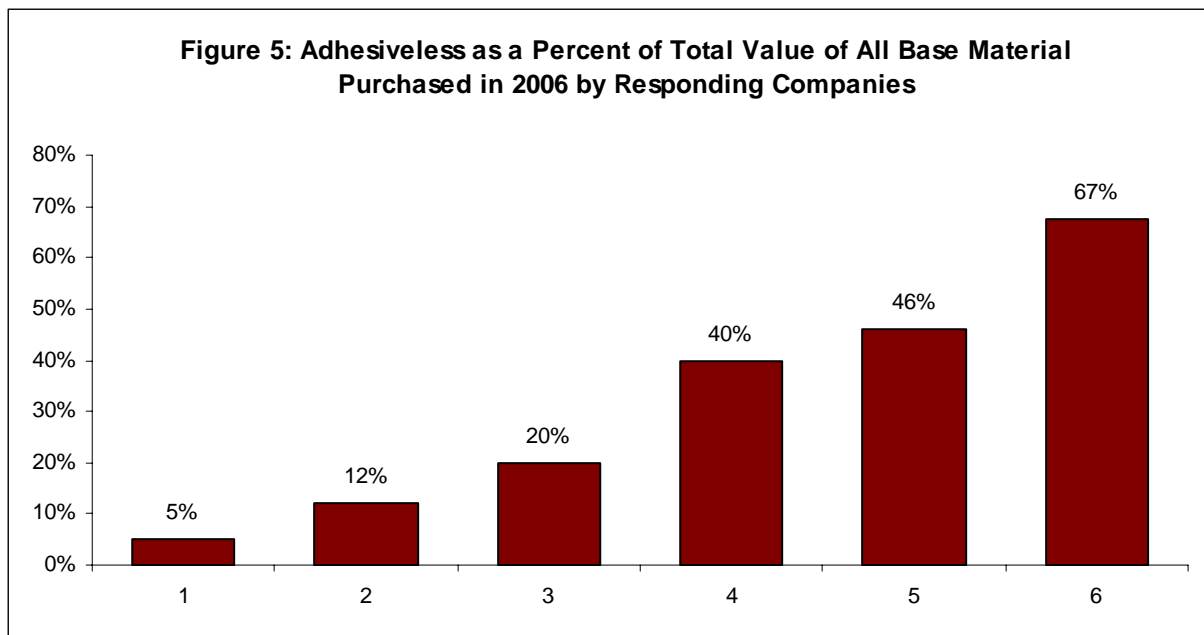
ADHESIVE VS ADHESIVELESS MATERIALS

The total value of base materials purchased by participating companies in 2006 was \$15 million. Of these purchases, \$13 million (86.5%) were adhesive materials, and the remaining \$2 million (13.5%) were adhesiveless. This data should not be compared with that of prior years as year-to-year changes are likely to reflect differences in the survey samples.



ADHESIVELESS MATERIALS BY COMPANY

Figure 4 on the previous page provides the aggregate percentage for all participating companies, where 13.5% of base materials used were adhesiveless. Figure 5, however, provides the breakdown of these numbers for each participating company. Among the participating companies, there is a high variation in the usage of adhesiveless materials.



MARKET SHARE BY MATERIAL TYPE FOR 2006 AND ESTIMATES OF 2007

Polyimide continued to dominate the flexible circuit market in 2006. Based on data provided by the companies participating in the annual survey, almost all flexible circuit production (99.7%) used polyimide as the base material. Despite the differences in the samples of reporting companies, this percentage is essentially the same as that reported for 2005. This year's survey participants expect a slight increase in the proportion of polyester and other materials used in 2007.

Figure 6: Flexible Circuit Production by Material Type in 2006
(All Responding Companies)

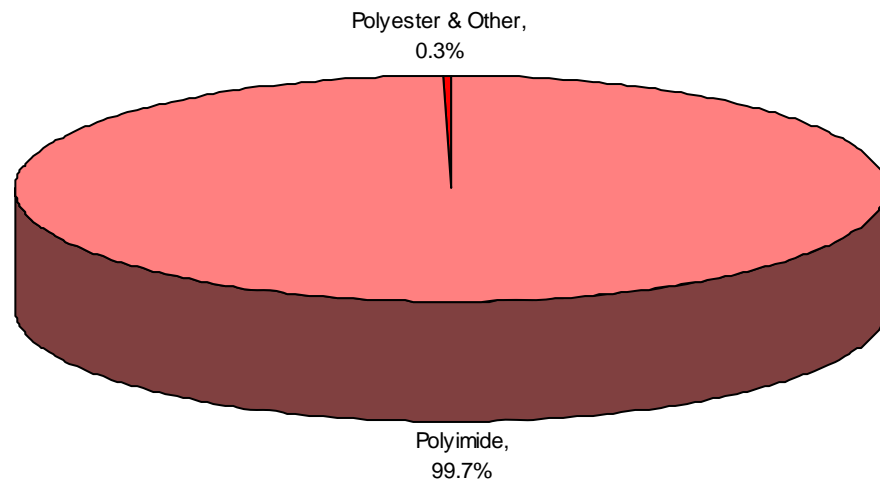
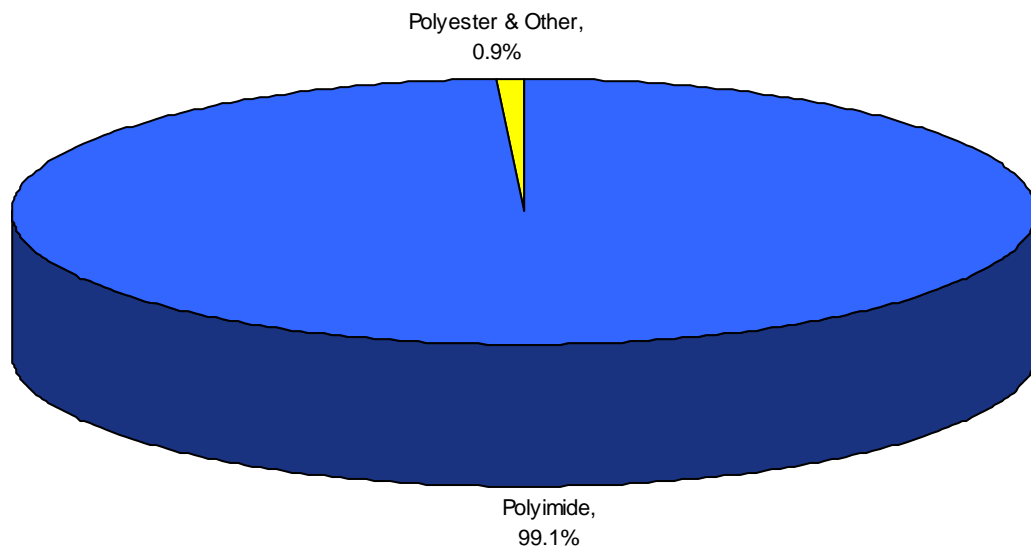


Figure 7: Estimates of 2007 Flexible Circuit Production by Material Type



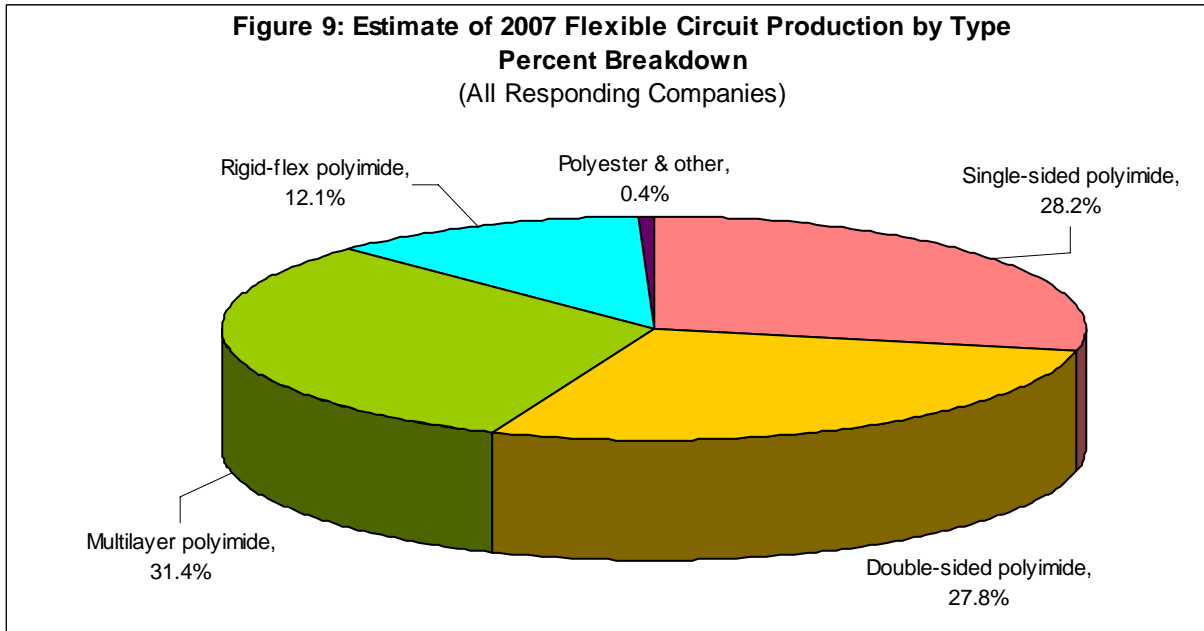
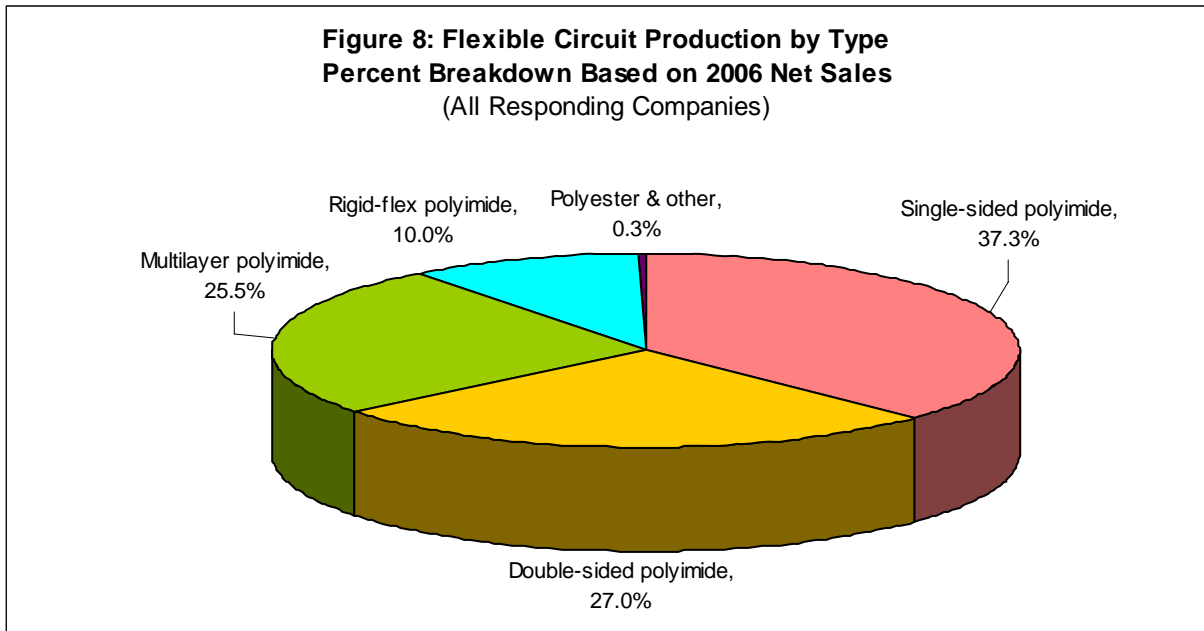
SECTION 3

TRENDS IN PRODUCT TYPES AND PRODUCTION

- ◆ Sales by Product Type
- ◆ Growth by Product Type for 2005, 2006, and Estimates for 2007
 - ◆ Type of Production: High-Volume, Quick-Turn and Prototype
 - ◆ Line Width and Spacing
 - ◆ Line Width and Spacing by Company

SALES BY PRODUCT TYPE

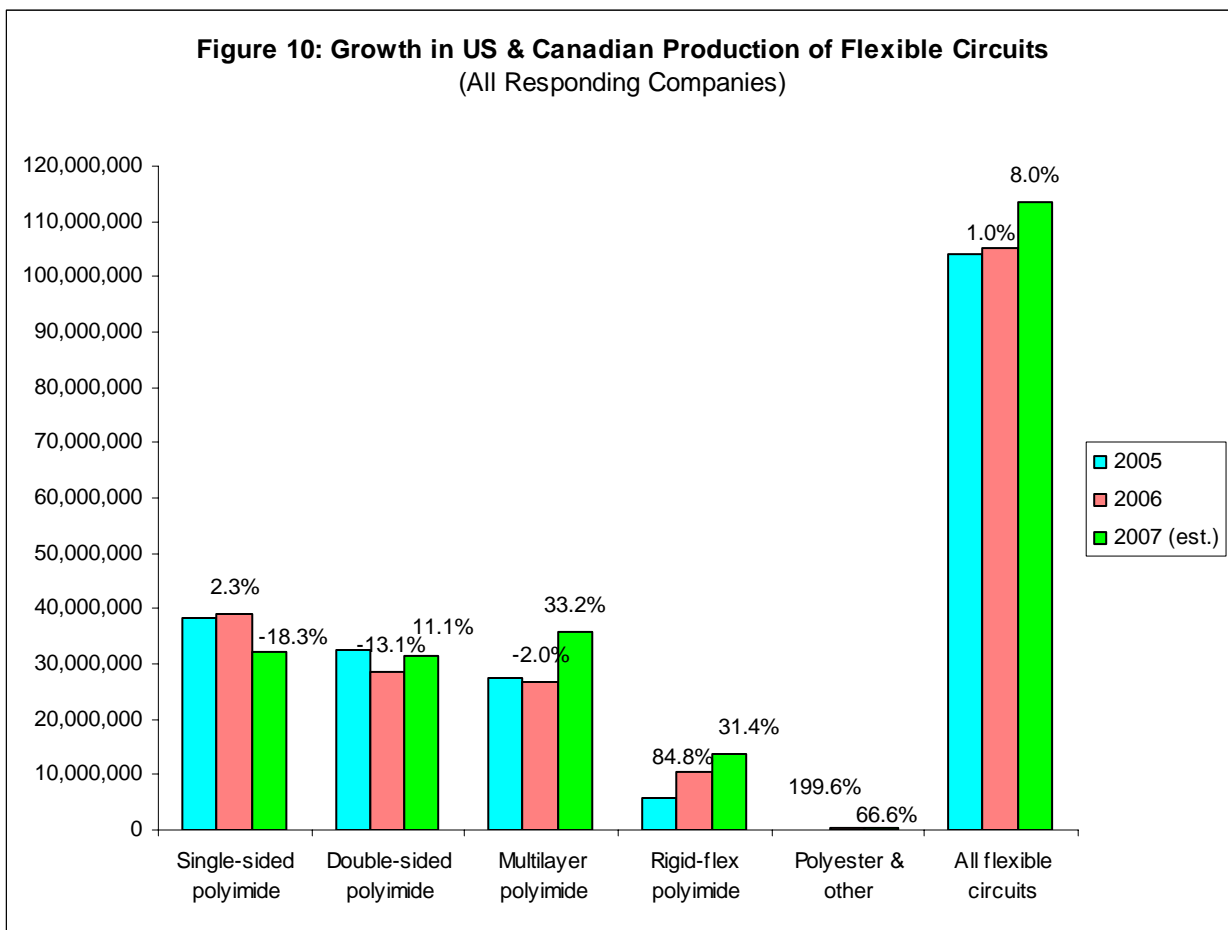
Figure 8 illustrates sales of all flexible circuits based on the responses from the participating companies. Single-sided polyimide accounted for 37% of all sales, followed by double-sided polyimide (27%) and multilayer polyimide (25.5%). Rigid-flex polyimide and polyester and other flexible materials accounted for the remaining 10% of flexible circuit sales in 2006. Survey participants forecast an increase in the percentage of multilayer and rigid-flex polyimide in 2007 (Figure 9).



GROWTH BY PRODUCT TYPE FOR 2005 TO 2006 AND ESTIMATES FOR 2007

Figure 10 shows the growth in sales of flexible circuits by participating companies from 2005 to 2006. Overall sales grew from \$104 million in 2005 to \$105 million in 2006 (1%) and it is estimated to grow another 8% in 2007 when compared to 2006. Rigid-flex Polyimide experienced the strongest growth (85%), from \$5.6 million in 2005 to \$10.4 million in 2006 and is poised for 31% growth in 2007. The dollar value of rigid-flex polyimide sales, however, is still much smaller than the single-sided and double-sided circuit sales.

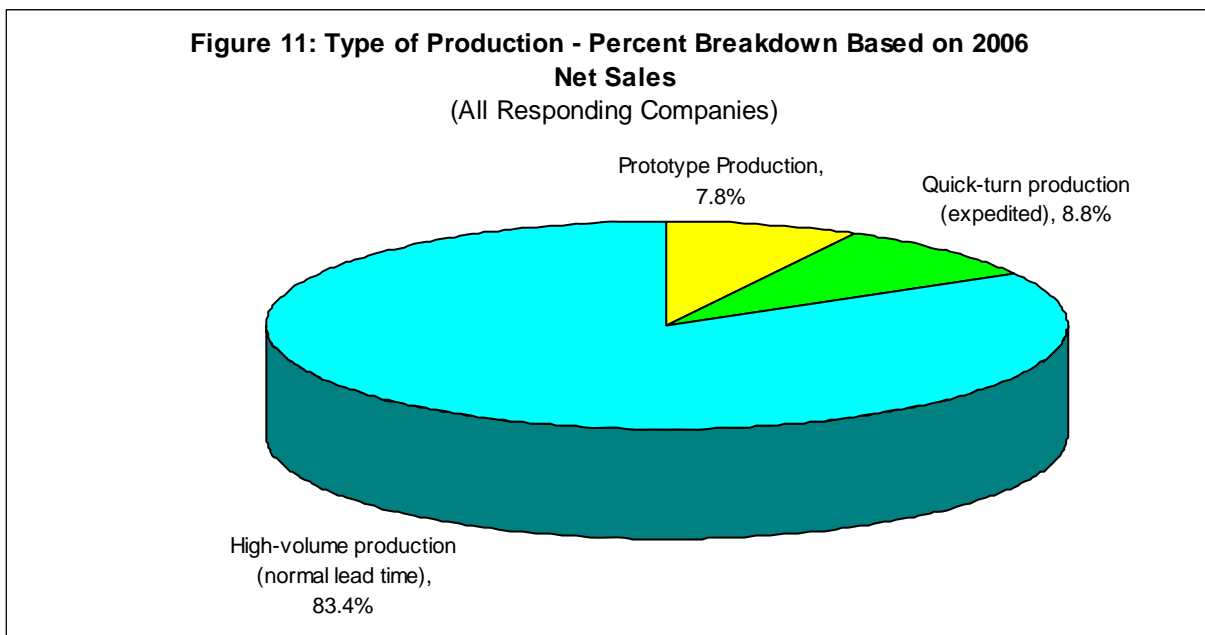
The six participating companies represent the survivors of today's flexible circuit industry in North America. Although total North American production has declined since 2000, the companies still producing flexible circuits in the region are growing.



Note: 2005 is base year.

TYPE OF PRODUCTION: HIGH-VOLUME, QUICK-TURN AND PROTOTYPE

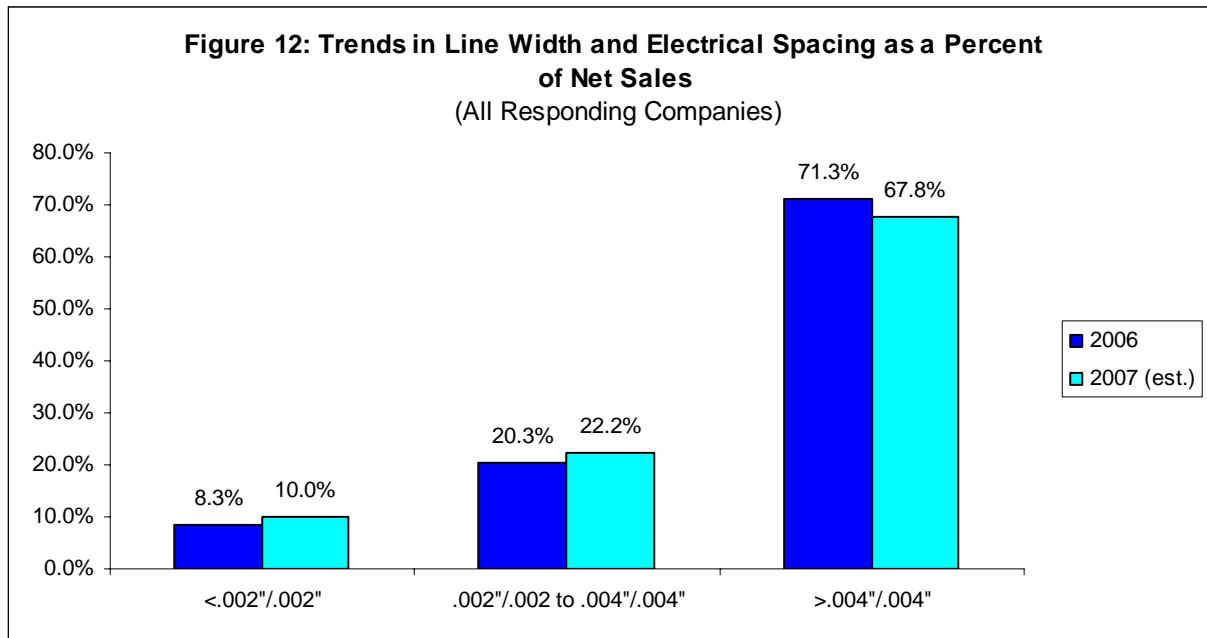
Participating companies were asked to break down their production into three types: high-volume, quick-turn, and prototype production. High-volume production is defined as work completed through the standard process with normal lead times. Quick-turn production is anything that is expedited. As indicated in Figure 11, the dollar value of the high-volume production was 83% of participating companies' sales in 2006, followed by prototype production (7.8%) and quick-turn production (8.8%).



This type of data is heavily affected by the sample of companies in the survey and the sample changes each year. Therefore, comparisons with the data reported in last year's report should be made with caution.

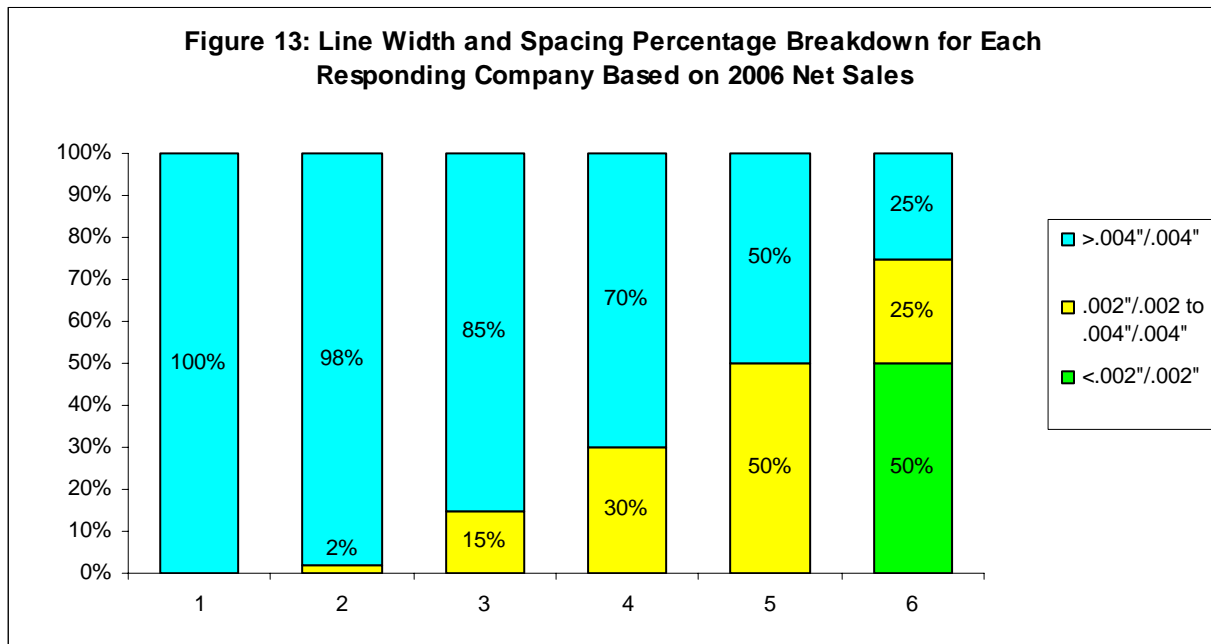
LINE WIDTH AND SPACING

The majority of flexible circuits produced in 2006 had line width and spacing greater than .004"/.004". Responding companies are expecting a slight reduction in this category in 2007, along with corresponding increases in circuits with smaller line width and spacing.



LINE WIDTH AND SPACING BY COMPANY

To illustrate industry capability, Figure 13 shows the distribution of line width and spacing for flexible circuits reported by each of the responding companies. As shown below, most companies (four out of six) reported having produced at least 70% of their flexible circuits in 2006 with line width and spacing greater than .004"/.004".



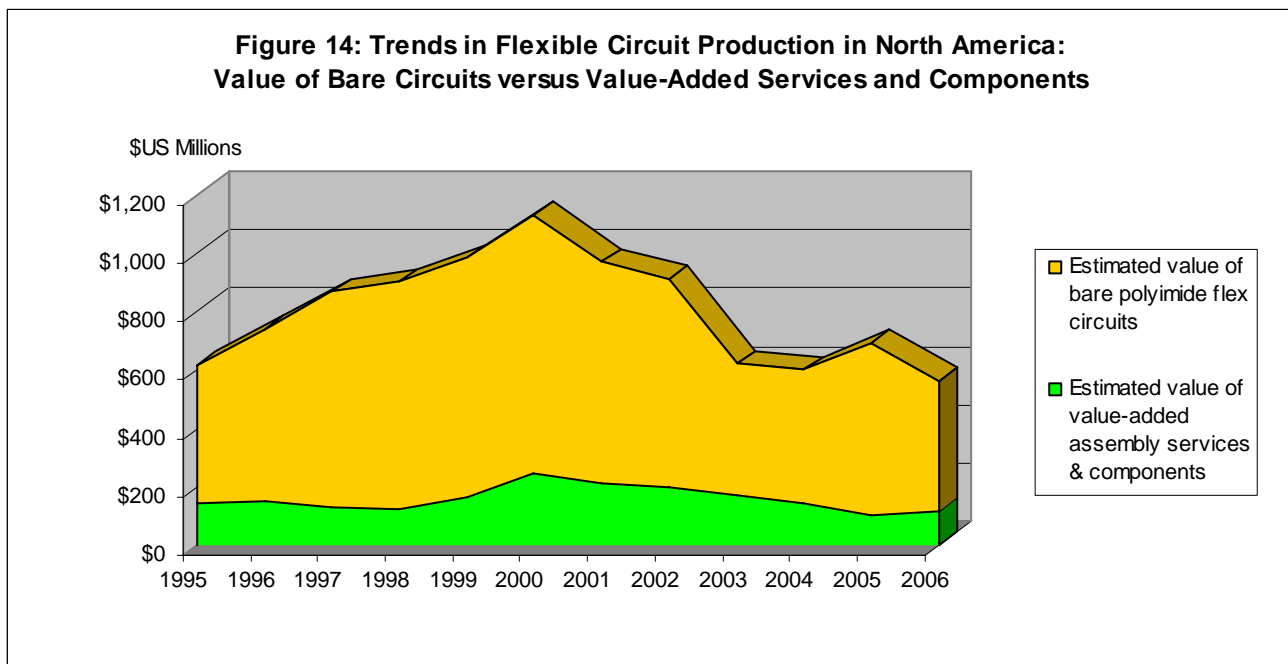
SECTION 4

TRENDS IN VALUE-ADDED SERVICES

- ◆ Historical Value of Base Materials Versus Components & Assembly Services
- ◆ Value-Added Services Versus Bare Flexible Circuits as Percent of Sales in 2006

HISTORICAL VALUE OF BASE MATERIALS VERSUS COMPONENTS & ASSEMBLY SERVICES

Figure 14 shows how the mix of bare circuits versus value-added services and components has affected the total value of flexible circuits produced in North America since 1995. It should be noted, however, that the aggregate ratio of bare circuits to value-added services is affected by the survey sample, which changes each year.



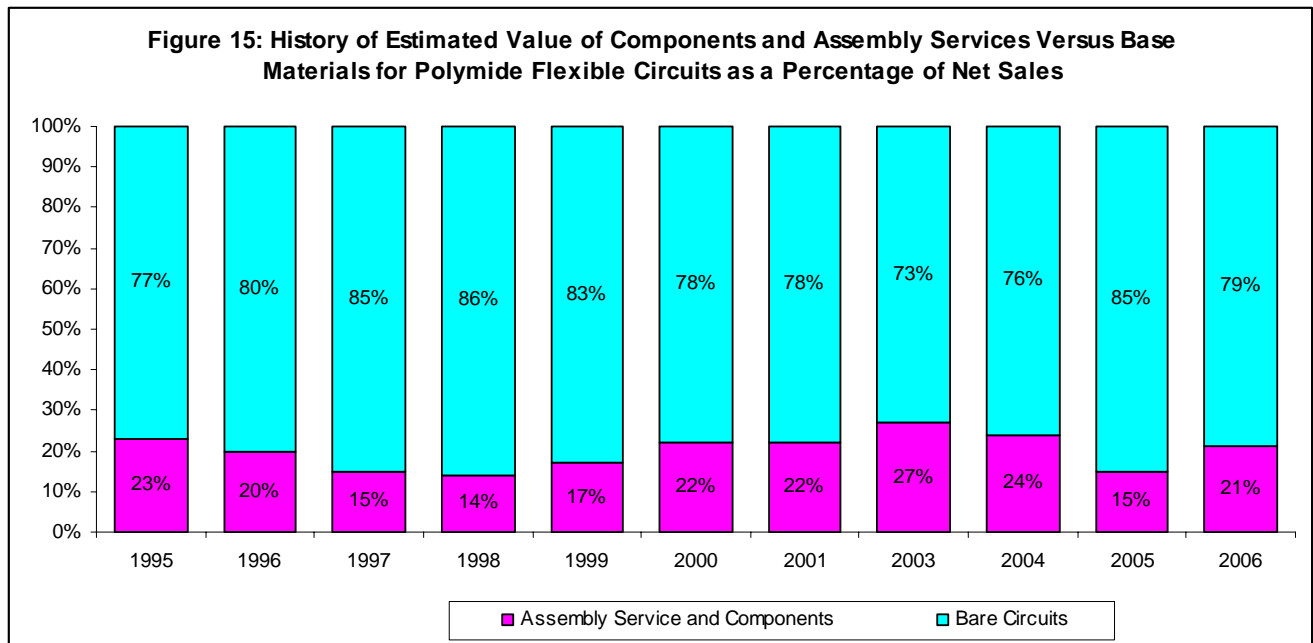
Bare Circuits vs. Value-Added Services and Components (in \$US millions)												
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total value of flexible circuits	\$618	\$738	\$867	\$902	\$984	\$1,130	\$970	\$914	\$621	\$600	\$690	\$561
Estimated value of value-added assembly services & components	\$142	\$148	\$130	\$126	\$167	\$249	\$213	\$201	\$168	\$144	\$104	\$118
Estimated value of bare polyimide flex circuits	\$476	\$590	\$737	\$776	\$817	\$881	\$757	\$713	\$453	\$456	\$587	\$443

Source: For estimates of total value of flexible circuits, IPC World PCB Production and Laminate Market for the years 1985-2006, Executive Market & Technology Forum. Other values are estimated based on the percent of revenue from value-added services reported by 2006 survey participants.

Note: 2002 value-added revenue estimate is based on 2001 survey data, as insufficient data was collected for 2002 and no report was published for that year.

VALUE ADDED VERSUS BARE FLEXIBLE CIRCUITS AS PERCENT OF SALES IN 2006

The value of base materials – including bare flex, adhesive-coated flex, cast adhesive, copper-clad flex, and rigid core material – was 79% in 2006 as a percentage of net sales for the participating companies. Year-to-year changes, however, may be caused by changes in the survey sample.



SECTION 5

ANALYSIS OF THE MARKET FOR FLEXIBLE CIRCUITS

- ◆ U.S. Flexible Circuit Market Size Estimate for 2006
 - ◆ Defining the Industry Markets for PCBs
 - ◆ Industry Markets Served by Flexible Circuit Producers
- ◆ Industry Markets for Single- and Double-Sided Polyimide Applications
- ◆ Industry Markets for Multilayer and Rigid-Flex Polyimide Applications

U.S. FLEXIBLE CIRCUIT MARKET SIZE ESTIMATE FOR 2006

IPC estimates the U.S. flexible circuit market in 2006 at approximately \$500 million. This estimate is based on U.S. production (as reported elsewhere in this report) minus exports plus imports, as shown below.

U.S. Flexible Circuit Market Calculation

Millions \$US		Source
\$500	U.S. production of flexible circuits	IPC World PCB Production and Laminate Market Report for the Year 2006
\$188	Minus exports	U.S. Department of Commerce
\$190	Plus imports	U.S. Department of Commerce
<u>\$502</u>	Estimated U.S. market	

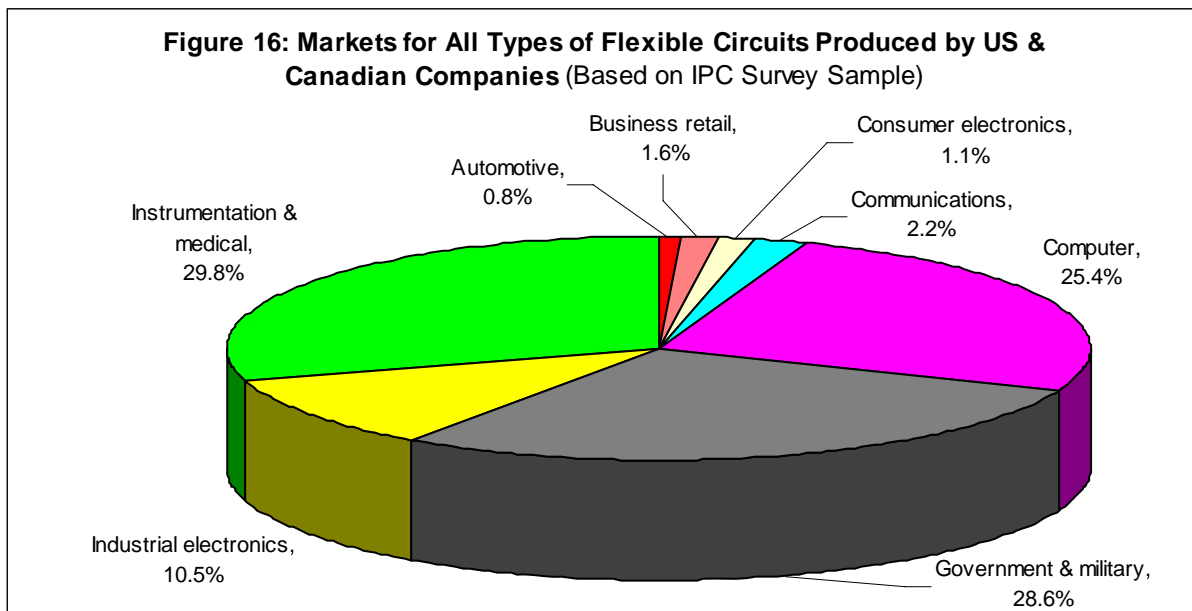
DEFINING THE INDUSTRY MARKETS FOR PRINTED CIRCUIT BOARDS

The IPC survey tracks sales to eight basic end-product industry markets. These markets are defined as follows:

Automotive	Engine and drive performance, convenience and safety, entertainment (radios, etc.) and other applications for diagnostic display and security.
Business Retail	Copy machines, cash registers, POS terminals, teaching machines, business calculators, gas pumps and taxi meters.
Communications	Mobile radio, touch-tone, portable communications, pagers, data transmissions, microwave relay, telecommunications and telephone switching equipment and navigation instruments.
Computer	Mainframe computers, mini-computers, broad level processors, add-on memories, input devices, output devices, terminals, printers.
Consumer Electronics	Watches, clocks, portable calculators, musical instruments, electronic games, large appliances, microwave ovens, pinball/arcade games and TV/home detection systems.
Government and Military Aerospace	Radar, guidance and control systems, communication and navigation, electronic warfare, ground support instrumentation, sonar ordinance, missiles and satellite related systems.
Industrial Electronics	Machine and process control, production test and measurement, material handling, machining equipment pollution, energy and safety equipment, numerical control, power controllers, sensors, weighing equipment.
Instrumentation and Medical	Test and measurement equipment, medical instruments and medical testers, analytical, nuclear lasers, scientific instruments and implant devices.

INDUSTRY MARKETS SERVED BY FLEXIBLE CIRCUIT PRODUCERS

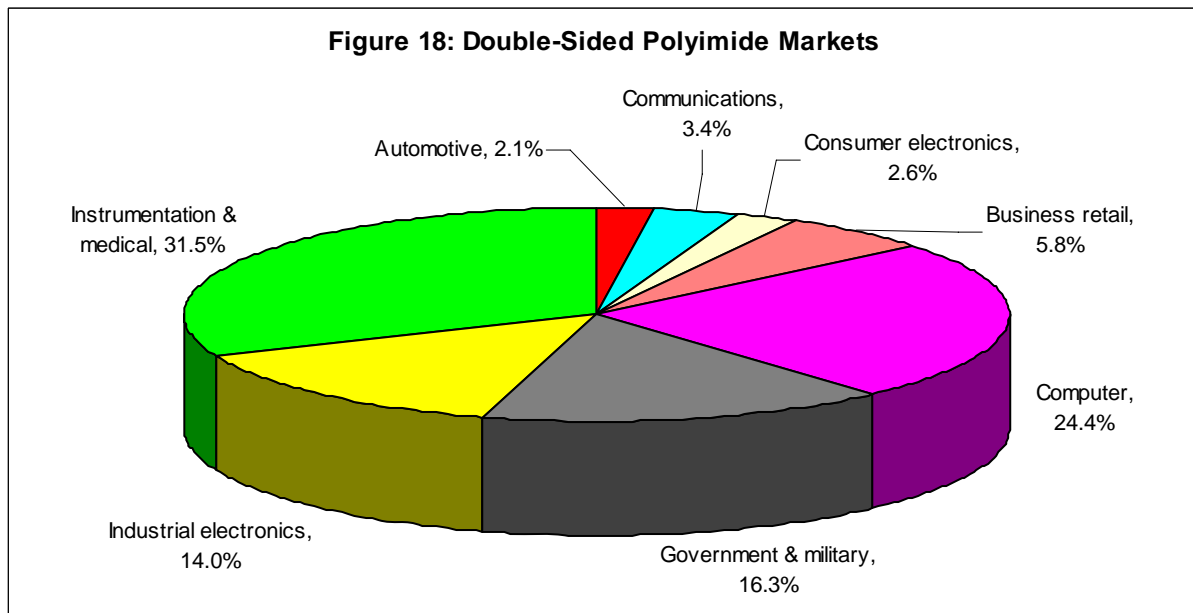
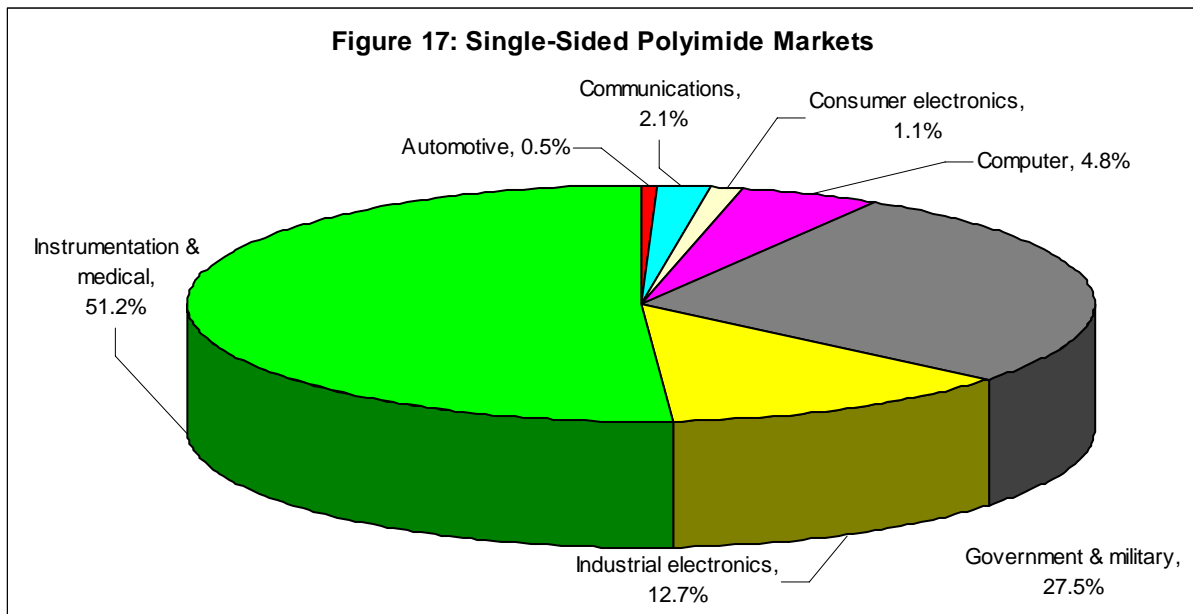
Figure 16 illustrates the industry markets served by responding companies in the USA and Canada. The instrumentation & medical industry is the largest market, purchasing 29.8% of flexible circuit value produced by the responding companies. The markets represented in Figure 16 are for all types of flexible circuits produced. Figures 17-21 on the following pages will provide more detailed information on the markets for each type of flexible circuit.



This type of data is heavily affected by the sample of participating companies. Since the sample changes each year, differences between the percentages reported here and in prior years are not considered significant or indicative of any trends.

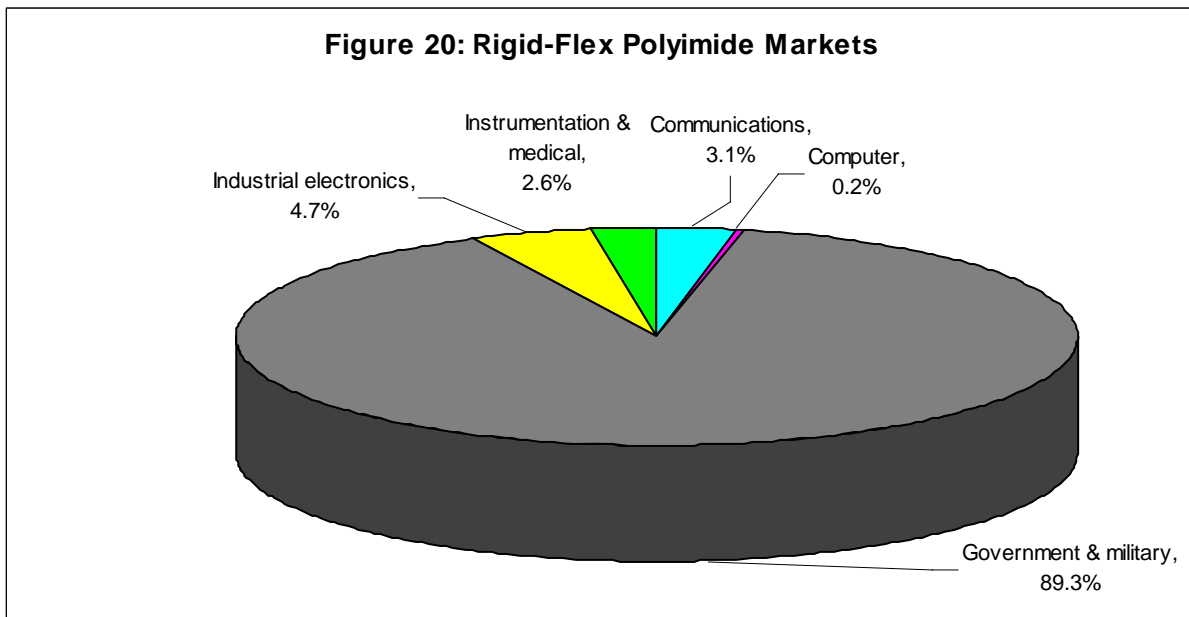
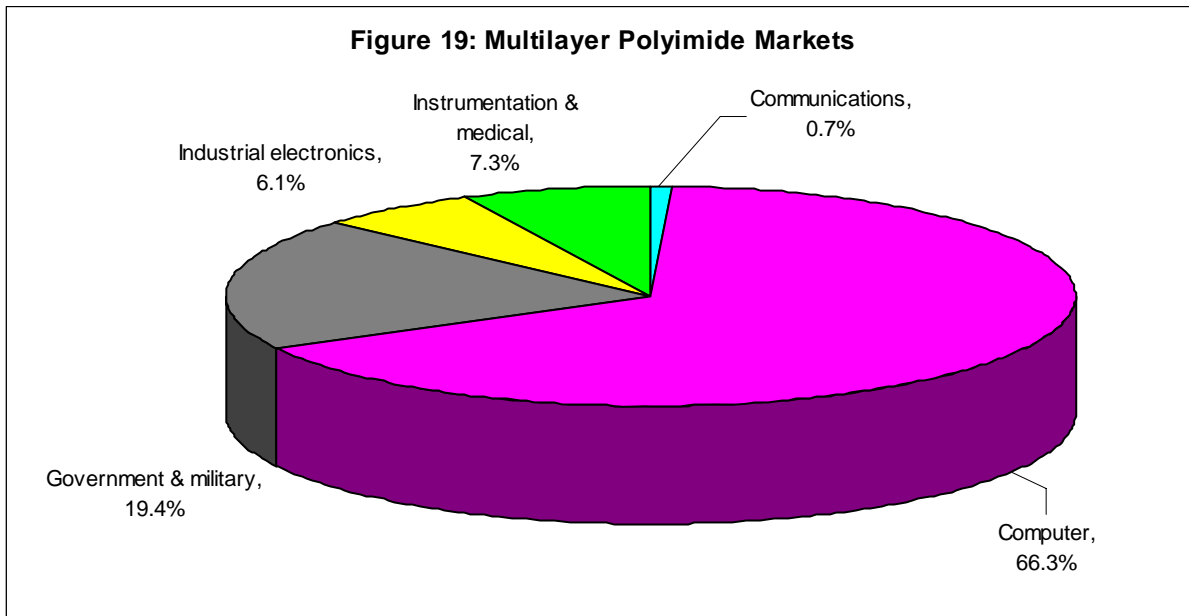
INDUSTRY MARKETS FOR SINGLE- AND DOUBLE-SIDED POLYIMIDE APPLICATIONS

Figures 17-20 illustrate the markets served by the participating companies for single-sided, double-sided, multilayer, and rigid-flex polyimide applications. For single-sided and double-sided polyimide applications, the instrumentation & medical industry is the largest market with 51% and 32% respectively. For multilayer polyimide applications, computer is the largest market, absorbing 66%. For rigid-flex polyimide applications, government and military is the largest market with more than 89% of rigid-flex sales.



INDUSTRY MARKETS FOR MULTILAYER AND RIGID-FLEX POLYIMIDE APPLICATIONS

In multilayer polyimide flexible circuits, the majority of sales are to the computer market, while in rigid-flex over 90% goes to the military/aerospace market.



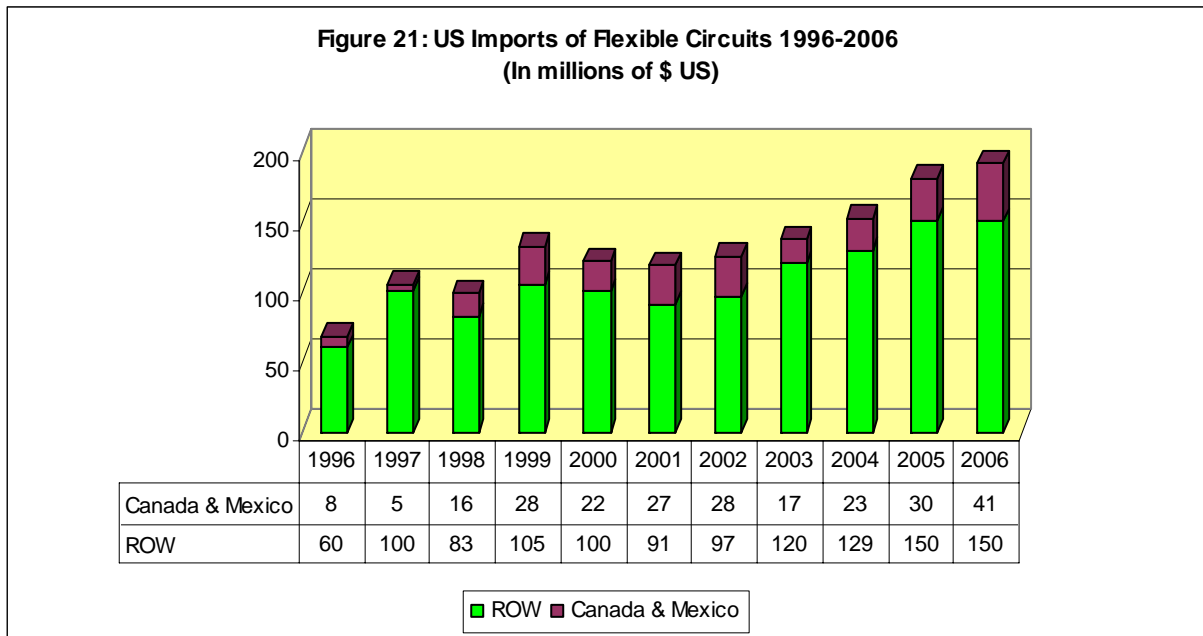
SECTION 6

U.S. IMPORTS AND EXPORTS

- ◆ Historical Trends in U.S. Imports of Flexible Circuits
 - ◆ Flexible Circuit Imports from Key Countries
- ◆ Production Origin of Flexible Circuits Sold in the USA and Canada
 - ◆ Historical Trends in U.S. Exports of Flexible Circuits
 - ◆ Flexible Circuit Exports to Key Countries
- ◆ Exports by Responding Companies in 2005 and 2006

HISTORICAL TRENDS IN U.S. IMPORTS OF FLEXIBLE CIRCUITS

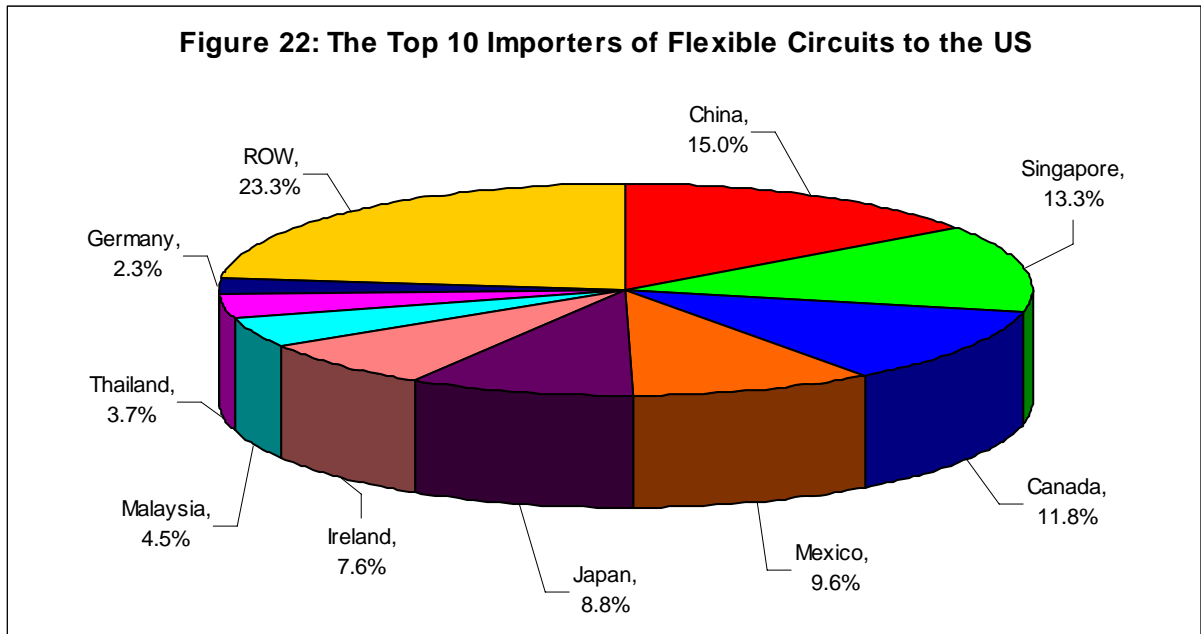
Figure 21 shows the U.S. Department of Commerce data on US imports of flexible circuits since 1996. These include both bare flexible circuits and flexible circuit assemblies. The level of US imports increased 6% from 2005 to 2006, from \$180 million to \$191 million. The growth rates for US imports from Canada and Mexico increased more (37%), from \$30 million in 2005 to \$41 million in 2006.



Source: United States International Trade Commission, <http://dataweb.usitc.gov/>

FLEXIBLE CIRCUIT IMPORTS FROM KEY COUNTRIES

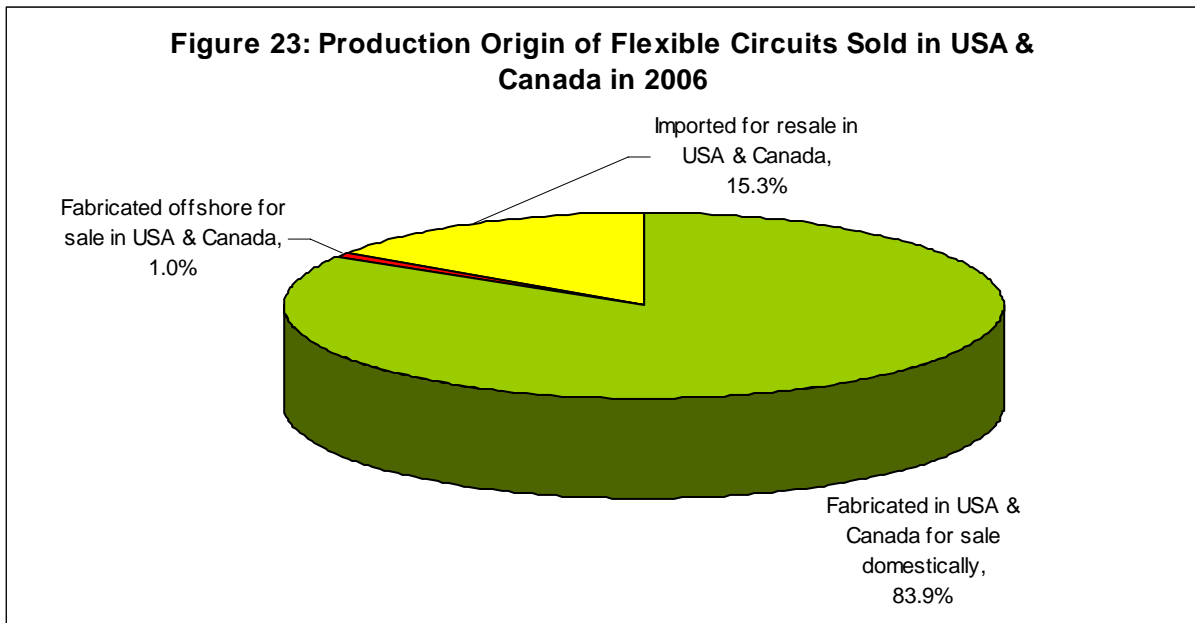
Figure 22 shows the top ten exporters of flexible circuits to the USA in 2006. Out of total U.S. imports of flexible circuits (\$191M), 48.8% are coming from Asian countries. Imports from Germany and Ireland are 10%, while 21% of US imports come from the neighboring countries of Canada and Mexico.



Source: United States International Trade Commission, <http://dataweb.usitc.gov/>

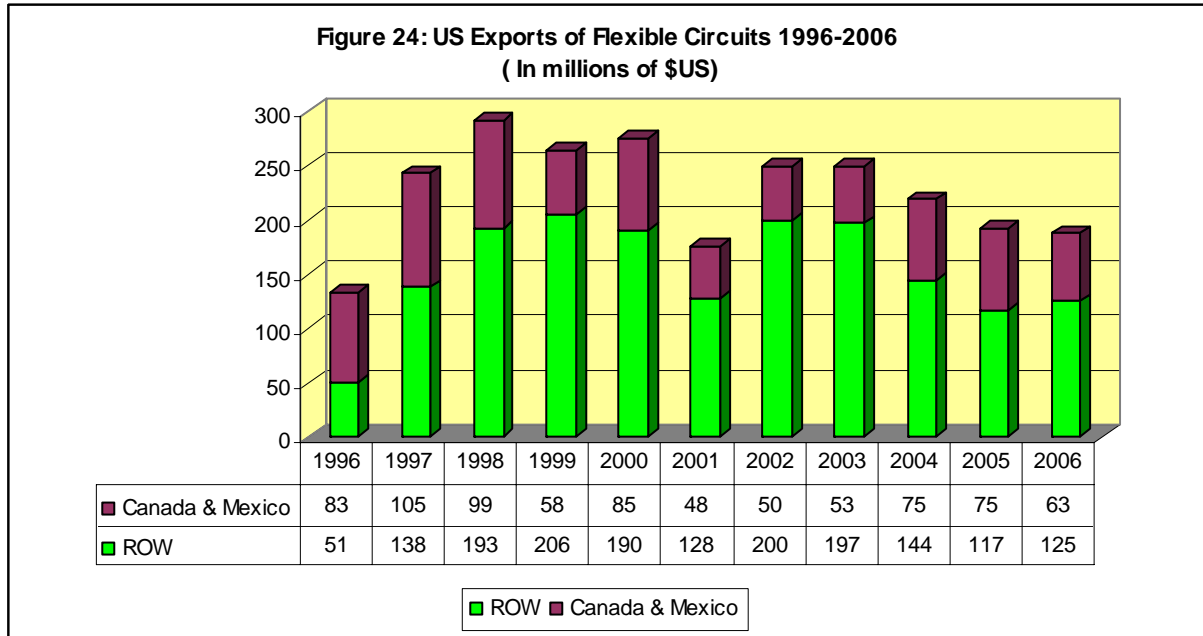
PRODUCTION ORIGIN OF FLEXIBLE CIRCUITS SOLD IN THE USA AND CANADA

Participating companies in this study reported that the majority of their flexible circuits sold in the USA and Canada were produced domestically (83.9%). 15.3% of the flexible circuits were imported for resale in USA & Canada and only 1% were fabricated offshore by the participating companies for sale in the USA & Canada.



HISTORICAL TRENDS IN U.S. EXPORTS OF FLEXIBLE CIRCUITS

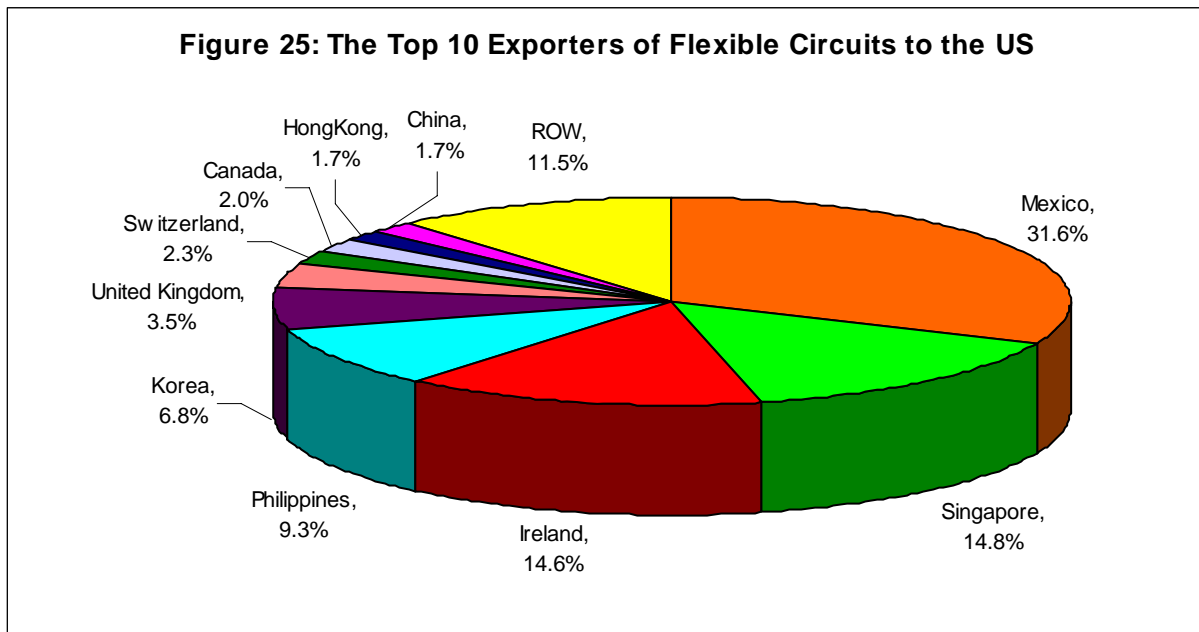
Figure 24 shows the U.S. Department of Commerce data on US exports of flexible circuits since 1996. The level of US exports decreased 2% from 2005 to 2006, from \$192 million to \$188 million. US exports to Canada and Mexico also decreased (16%), from \$75 million in 2005 to \$63 million in 2006.



Source: United States International Trade Commission, <http://dataweb.usitc.gov/>

FLEXIBLE CIRCUIT EXPORTS TO KEY COUNTRIES

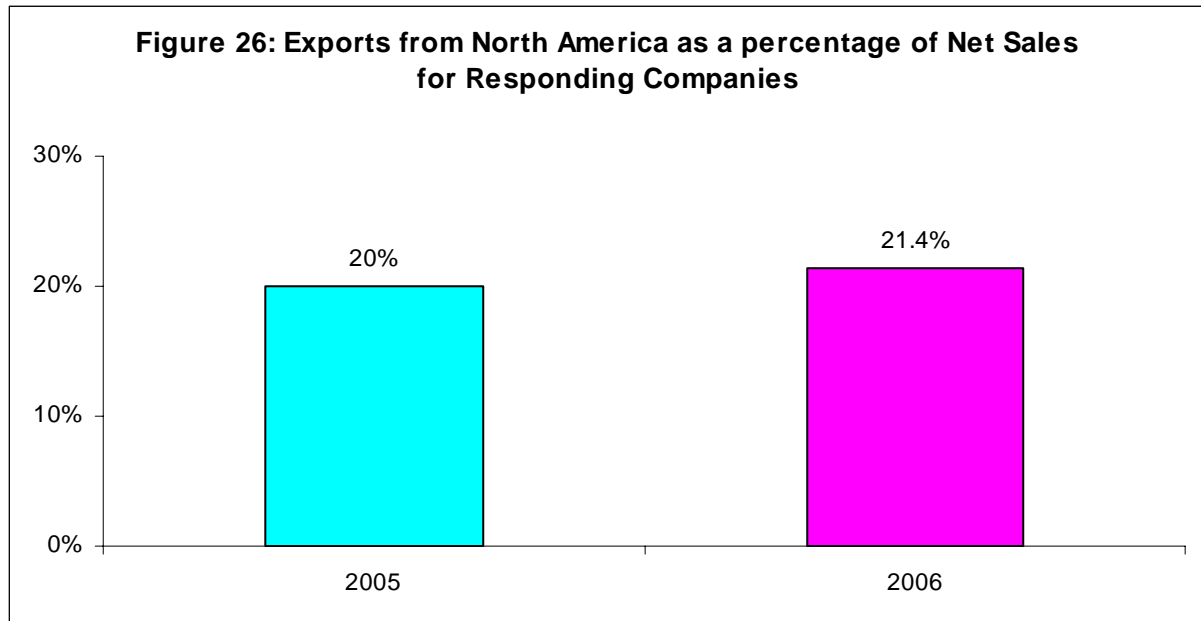
In 2006, U.S. exports of flexible circuits were \$188 million. More than 70% of US exports went to four countries (Mexico, Singapore, Ireland, and Philippines).



Source: United States International Trade Commission, <http://dataweb.usitc.gov/>

EXPORTS BY RESPONDING COMPANIES IN 2005 AND 2006

Responding companies reported an increase of 1.4% in their exports as a percentage of net sales, from 20% in 2005 to 21.4% in 2006. This suggests that the volume of their exports grew at about the same rate as their overall sales.



SECTION 7

APPENDICES

- ◆ Survey Questionnaire
- ◆ Annual Studies Sponsored by the Executive Forum in 2007

Annual Market Survey for Producers of Flexible Circuits in North America

As part of the IPC Executive Market and Technology Forum's yearly efforts to identify size and trends in the North American flexible circuits market, we ask that you complete the following questionnaire. In exchange for your participation, you will receive a free copy of the 2006 North American Market for Flexible Circuits.

IPC guarantees that your data will be treated in strict confidence. Only aggregate numbers will be published, and only if individual company numbers cannot be deduced from the aggregate numbers.

1. Please enter the actual value (not in thousands or millions) and do not enter any non-numeric characters. (e.g. **do not enter 500K or 0.5M, but please enter it as 500000**).
2. Enter all dollar amounts as \$US. Canadian and Mexican participants can use the following average 2006 exchange rates when converting your currency to US dollars: From **Canadian dollars, multiply by 0.8821**, from **Mexican pesos, multiply by 0.09186**.
3. This is an active form. It will automatically perform calculations and insert commas as separators for numbers greater than 999.
4. Please collect all data before filling in this on-line form. It cannot be saved and must be completed in one sitting. IPC regrets this inconvenience and is working to correct it.
5. Please submit this survey questionnaire by March 30, 2007.

[Reset/Clear the Form](#)

[Print Questionnaire](#)

COMPANY INFO

Survey Access Code

IPC Company Code

E-mail Address

If you don't know these codes, please contact Piyamart Hom-uem
homupi@ipc.org or 1 847 597 2868.

SALES OF FLEXIBLE CIRCUITS IN 2005 AND 2006

1. Please provide data on your company's 2005 and 2006 net sales of flex circuit products in North America (USA and Canada)

	Net Sales in 2005	Net Sales in 2006
A.1. Single-sided polyimide	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
A.2. Double-sided polyimide	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
A.3. Multilayer polyimide	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
A.4. Rigid-flex polyimide	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
	+ _____	+ _____
A. Total - all polyimide	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
B. All types of polyester	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
C. All types using other flex material	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>
	+ _____	+ _____
GRAND TOTAL (A+B+C)	US \$ <input style="width: 100px;" type="text"/>	US \$ <input style="width: 100px;" type="text"/>

BASE MATERIAL, COMPONENTS, AND SERVICES

2. Total value of all base material purchased in 2006 US \$
3. Adhesiveless as **PERCENTAGE** of the total value of all base material purchased in 2006
4. Total value of all components purchased in 2006 US \$
5. Total value of assembly services and other value-added services sold in 2006 US \$

EXPORTS AND PRODUCTION ORIGINS

6. Net sales value of flex circuit exports outside of USA and Canada in 2005 and 2006:

2005 US \$ Canadian companies should not include exports to USA and US
2006 US \$ companies should not include exports to Canada.

7. Origins of all flex circuits shipped in USA and Canada in 2006 (if exact figures are not available, please estimate)

Percentage of flex circuits fabricated in USA & Canada

Percentage of flex circuits manufactured by your company offshore and sold in USA & Canada

Percentage of flex circuits imported for resale

TOTAL (must equal 100%)

PRODUCTION OF FLEX CIRCUITS IN 2006

8. Prototype and production volume in 2006

As a Percentage of Net Sales in 2006

A. Prototype	<input type="text"/>
B. Quick-turn production (expedited)	<input type="text"/>
C. High-volume production (normal lead time)	<input type="text"/>
TOTAL (must equal 100%)	<input type="text"/>

9. Line width and electrical spacing based on net sales

	Percentage of Net Sales in 2006	Percentage of Net Sales in 2007 (estimate)
A. <.002"/.002"	<input type="text"/>	<input type="text"/>
B. .002"/.002" to .004"/.004"	<input type="text"/>	<input type="text"/>
C. >.004"/.004"	<input type="text"/>	<input type="text"/>
TOTAL (must equal 100%)	<input type="text"/>	<input type="text"/>

MARKETS SERVED IN 2006

10. Please provide the 2006 net sales to each industry market as a **PERCENTAGE** of total flex circuit sales (for each type of flexible circuits).

Markets:	Single-sided Polyimide	Double-sided Polyimide	Multilayer Polyimide	Rigid-Flex Polyimide	Total Polyester	Total of all types using other flex materials
A. Automotive	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
B. Communications	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
C. Consumer electronics	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
D. Business retail	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
E. Computer	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F. Government & military	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
G. Industrial electronics	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
H. Instrumentation & medical	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
TOTALS	<hr style="width: 100%;"/> <input type="text"/>	+ <hr style="width: 100%;"/> <input type="text"/>	+ <hr style="width: 100%;"/> <input type="text"/>	+ <hr style="width: 100%;"/> <input type="text"/>	+ <hr style="width: 100%;"/> <input type="text"/>	+ <hr style="width: 100%;"/> <input type="text"/>

(The total percentage for each type that you answer MUST equal 100%)

2007 FLEXIBLE CIRCUIT SALES ESTIMATE

11. Please estimate the net sales value of each type of flexible circuits your company expects to sell in 2007

A.1. Single-sided polyimide	<input type="text"/>
A.2. Double-sided polyimide	<input type="text"/>
A.3. Multilayer polyimide	<input type="text"/>
A.4. Rigid-flex polyimide	<input type="text"/>
	<hr/>
A. Total - all polyimide	<input type="text"/> +
B. All types of Polyester	<input type="text"/>
C. All types using other flex material	<input type="text"/>
	<hr/>
TOTAL FLEX CIRCUITS (A+B+C)	<input type="text"/> +

REPORT DISTRIBUTION

If you have colleagues in your facility who would benefit from receiving this report please provide us with their e-mail address. We will add them to the distribution list.

1. E-mail Address	<input type="text"/>
2. E-mail Address	<input type="text"/>
3. E-mail Address	<input type="text"/>
4. E-mail Address	<input type="text"/>
5. E-mail Address	<input type="text"/>

COMMENTS

Please use the space below to write any comments, notes or special needs related to this survey:

It is suggested that you print the completed questionnaire and keep it as back up

When your survey is successfully submitted, you will almost immediately see a screen confirming this. Very shortly after this, you should also receive an automatic email, thanking you for your survey from surveys@ipc.org. If you are not sure whether your survey was successfully submitted, please contact Piyamart at homupi@ipc.org or 1-847-597-2868.

Print

Review the Completed Questionnaire

Submit Data

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