#### ATTACHMENT B



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. CENSUS BUREAU FORM

#### BRDI-1 (09-26-2016) Draft 4

#### 11016011

## 2016 BUSINESS R&D AND INNOVATION SURVEY

OMB No. 0607-0912: Approval Expires 12/31/2018

DUE DATE:
Report electronically: https://econhelp.census.gov/brdis User ID:
Password:
Reporting electronically allows you to save your work as you go through the form and could save you time.
<b>Report by mail:</b> If you report online, please do <b>not</b> mail in the paper form.
U.S. CENSUS BUREAU 1201 East 10th Street Jeffersonville, IN 47132-0001
<ul> <li>For information or assistance:</li> <li>https://econhelp.census.gov/brdis</li> <li>Call 1-800-772-7851, option "5" (8 a.m4:45 p.m. EST, M-F)</li> </ul>
4.40 p.m. 201, W-1/

**YOUR RESPONSE IS REQUIRED BY LAW.** The survey is conducted under the authority of Title 13, United States Code, Sections 8(b), 131, and 182, and Title 42, United States Code, Sections 1861-76 (National Science Foundation Act of 1950, as amended). Title 13, United States Code, Sections 224 and 225 requires businesses and other organizations that receive this questionnaire to answer the questions and return the report to the U.S. Census Bureau.

**YOUR RESPONSE IS CONFIDENTIAL BY LAW.** Title 13, United States Code, Section 9 requires that your response be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. The law also provides that copies retained in your company's files are immune from legal process.

**THIS COLLECTION HAS BEEN APPROVED** by the Office of Management and Budget (OMB). The eight-digit OMB approval number is 0607-0912 and appears at the upper right of this page. Without this approval, we could not conduct this survey.

We estimate this survey will take 15 hours, on average, to complete. On the back of this form you will find the full burden estimate statement.

**YOUR RESPONSE IS IMPORTANT.** Better information about R&D and innovation in the U.S. business sector will help leaders make better decisions to strengthen American competitiveness. The Business R&D and Innovation Survey is a national survey that collects critical information about research and development (R&D) and innovation at businesses operating in the U.S. Policy makers and data users in industry and academia make use of this information for short- and long-term planning.

**THANK YOU.** Accurate and timely statistical information could not be produced without your continued cooperation and goodwill. Thank you.

~ This survey is jointly conducted by the U.S. Census Bureau and the National Science Foundation ~



# **Table of Contents**

#### **Survey Overview and Table of Contents**

The survey is divided into six sections. Each section asks questions about different aspects of R&D or innovation at your company. Due to the specialized nature of each section, it may be necessary to collaborate with colleagues in different departments to answer the questions. The sections are color coded and cover the following topical areas:

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**Topics:** company ownership, business(es), revenues, and innovation **Requires:** knowledge of the company's sales and revenues

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**Topics:** R&D expenses and capital expenditures for R&D **Requires:** knowledge of your company's accounting concepts and access to financial records

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**Topics:** costs for work that was funded, paid for, or reimbursed by others **Requires:** knowledge of your company's financial records related to R&D activities

### Section 4: Management and Strategy of R&D ..... p.35

**Topics:** characteristics of R&D reported in Sections 2 and 3 **Requires:** familiarity with the technical and strategic aspects of your company's R&D

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**Topics:** your company's employees, focusing on those who work on R&D activities **Requires:** familiarity with human resources (HR) concepts and access to HR records

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**Topics:** intellectual property and technology transfer **Requires:** knowledge of your company's general business strategy, patenting, and licensing

#### Changes from the 2015 survey

On the basis of extensive conversations with many of the 2015 survey respondents, the 2016 survey has been improved. Sections and questions have been modified to make the concepts presented easier to understand. For a list of specific changes, go to **https://econhelp.census.gov/brdis**.

#### Filing electronically

You may submit your survey online via a secure website. Online submission allows you to save the data on secure Census Bureau servers as you go, so you can save, exit, and resume later without losing any of your data. It also allows you to save a paper or electronic copy of your completed survey. To submit online, follow the instructions at <u>https://econhelp.census.gov/brdis</u>.

#### **Electronic materials**

Electronic versions of the questionnaire and related documents are available to print or share with others in your company via e-mail. They can be found at <u>https://econhelp.census.gov/brdis</u>. **You can:** 

#### Print and download copies of the questionnaire in PDF format

- Download Excel worksheets for each section
- Get question-by-question instructions, definitions, and examples that provide clarification
- Get answers to frequently asked questions, including how the data will be used



### What is Research and Development (R&D)?

Research and development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge. This includes a) activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses (basic research); b) activities aimed at solving a specific problem or meeting a specific commercial objective (applied research); and c) systematic work, drawing on research and practical experience and resulting in additional knowledge, which is directed to producing new products or processes or to improving existing products or processes (development). R&D includes both direct costs such as salaries of researchers as well as administrative and overhead costs clearly associated with the company's R&D.

The term R&D does NOT include expenditures for:

- Costs for routine product testing, quality control, and technical services unless they are an integral part of an R&D project
- Market research
- Efficiency surveys or management studies
- Literary, artistic, or historical projects, such as films, music, or books and other publications
- Prospecting or exploration for natural resources

#### Does R&D include development of software and Internet applications?

Research and development activity in software and Internet applications refers only to activities with an element of uncertainty and that are intended to close knowledge gaps and meet scientific and technological needs. Report in this survey all software R&D as defined here regardless of the eventual user (internal or external).

R&D activity in software INCLUDES:

- Software development or improvement activities that expand scientific or technological knowledge
- Construction of new theories and algorithms in the field of computer science

R&D activity in software EXCLUDES:

- Software development that does not depend on a scientific or technological advance, such as
  - supporting or adapting existing systems
  - adding functionality to existing application programs, and
  - routine debugging of existing systems and software
- Creation of new software based on known methods and applications
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process

#### **Reporting unit**

The reporting unit is your company, including all subsidiaries and divisions regardless of location. Include only subsidiary companies where there is more than 50 percent ownership. If you are owned by a foreign parent, the reporting unit for the survey is your U.S.-located company, including all your majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign parent and any foreign affiliates your company does not own should be treated the same as any business partner, customer, or supplier you do not own.

#### **Reporting period**

Report data for the calendar year 2016, if possible, or for your company's fiscal year ending between April 2016 and March 2017.

#### **Estimates are acceptable**

Please report all items to the best of your ability.

# To speak with a survey specialist, call 1-800-772-7851, option '1' for English, then option '5'.

Survey specialists are available 8 a.m. to 4:45 p.m. EST, M-F to help with any questions you may have.



r	Vas your company a majority-owned subsidiary of a foreign company in 2016?
l	Yes → Please provide the following information and then skip to Question 1-
	Name of parent company
	REPORTING INSTRUCTIONS FOR FOREIGN-OWNED COMPANIES:
	If you are owned by a foreign parent, the reporting unit for the survey is your U.Slocated company, including all your majority-owned subsidiaries and divisions regardless of location reporting purposes, your foreign parent and any foreign affiliates your company does not ov should be treated the same as any business partner, customer, or supplier you do not own.
	If you pay your foreign parent for R&D services, those costs should be included in your resp in Section 2 as "costs for purchased R&D services."
	If your foreign parent pays or reimburses your company for R&D services, the costs for this should be included in your responses in Section 3 as "costs funded, paid for, or reimbursed others."
	Report your survey data using U.S. generally accepted accounting principles (U.S. GAAP) as recognized by the Financial Accounting Standard Board (FASB). If your company follows International Financial Reporting Standards (IFRS), we request that you estimate any adjustn that would be required to conform to U.S. GAAP.
[	No
	id another U.S. company other than a holding company own more than 50 perc f the voting interest in your company during 2016?
2 D 0	oid another U.S. company other than a holding company own more than 50 perc f the voting interest in your company during 2016? ☐ Yes → Please provide the following information:
2 C 0	f the voting interest in your company during 2016?
-2 C o	f the voting interest in your company during 2016? ☐ Yes → Please provide the following information:
2 D	f the voting interest in your company during 2016? Yes → Please provide the following information: Name of parent company EIN of owner (9 digits) (MM) (DD) (YYY)
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2 C 0 1	f the voting interest in your company during 2016?         Yes → Please provide the following information:         Name of parent company         EIN of owner (9 digits)         Date parent company         WMM)         (MM)         (DD)         (YY)         Provide the following information:         Name of parent company         (MM)         (DD)         (YY)         Date parent company purchased your company         Provide the parent company was purchased between April 1, 2016 and December 31, 2016, report only for the period January 1, 2016 to the date of purchase. If your company was purchased before April 1, 2016, complete Question 1-6 and return this form to the Census Bureau – you are no required to complete the rest of this survey unless your owner instructs you to complete this survey.

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**EXECUTE** 

1-3	subsidiaries outside the 50 United States and D.C. during 2016?
	Yes → Include data for these operations/subsidiaries in your survey responses
	□ No
1-4	Has your company ceased operations?
1-4	
	Yes → Please provide the following information: (MM) (DD) (YYYY)
	Date your company ceased operations
	<b>REPORTING INSTRUCTIONS:</b> If your company ceased operations between April 1, 2016 and December 31, 2016, report only for the period January 1, 2016 to the date your company ceased operations. If your company ceased operations before April 1, 2016, complete Question 1-6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.
	□ No
1-5	Did your company have discontinued operations in 2016?
	Yes → Include data for these operations in your survey responses
	□ No
1-6	
1-0	Who is the survey coordinator? The survey coordinator is the person at your company responsible for gathering all requested information, ensuring instructions are followed, and submitting the completed survey. The survey coordinator may not be able to personally complete the entire survey and may need to request information from other knowledgeable resources concerning your company's R&D, accounting, human resources, and legal matters.
	Name
	Title
	Telephone
	Area code     Number     Extension
	E-mail address
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#### **Business Codes**

Do the business code(s) listed below reflect all applicable codes from the list on pages 46-47 in which your company operated worldwide during 2016?

NOTE: These codes will be used to describe both business activities and R&D activities and may differ from industry codes used by other government surveys and reports.

If no business codes are printed below, please write in the codes from pages 46-47 that apply to your company.

Yes → Continue with Question 1-8

#### $No \rightarrow$ Draw a line through codes that are incorrect. As needed, enter additional codes and descriptions from pages 46-47 in the spaces provided.

Business code (see pages 46-47)	Description



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	ring 2016?		ompany's <u>wo</u>		\$Bil.	Mil.	Thou.
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	w much of the 20			revenue an	nounts was	for each b	ousiness
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(2	) Domestic sales a	and operatir	ig revenues	reported ir	Question	1-9 (2)	
	Business code		rldwide sales a erating revenue			omestic sales perating reve	
	(see page 6)	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	Thou.
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e.							
e. f.							
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-							
f. g.							
f.							
f. g.	Less eliminations – the sales and revenues that are eliminated in order						
f. g. h.	the sales and revenues that are						
f. g. h.	the sales and revenues that are eliminated in order to consolidate the						



Product (good or service) innovation
A product innovation is the market introduction of a <b>new</b> or <b>significantly</b> improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.
<ul> <li>Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.</li> <li>Product innovations could have been originally developed by your company or by other companies.</li> </ul>
<b>1-11</b> During the three years 2014 to 2016, did your company introduce:
a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)? No
b. New or significantly improved services?
<b>1-12</b> If you answered "yes" to either 1-11, line a, or 1-11, line b, were any of your product innovations during the three years 2014 to 2016:
a. New to your market? No
Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets.)
b. New only to your company? No
Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.
<b>1-13</b> Using the definitions above, please give the percentage of your total sales in 2016 from:
a. New or significantly improved goods and services introduced during 2014 to 2016 that were <b>new to your market</b>
b. New or significantly improved goods and services introduced during 2014 to 2016 that were <b>new only to your company</b>
c. Goods and services that were <b>unchanged or only marginally modified</b> during 2014 to 2016 (include the resale of new goods or services purchased from other companies)
d. Total sales in 2016

1-14

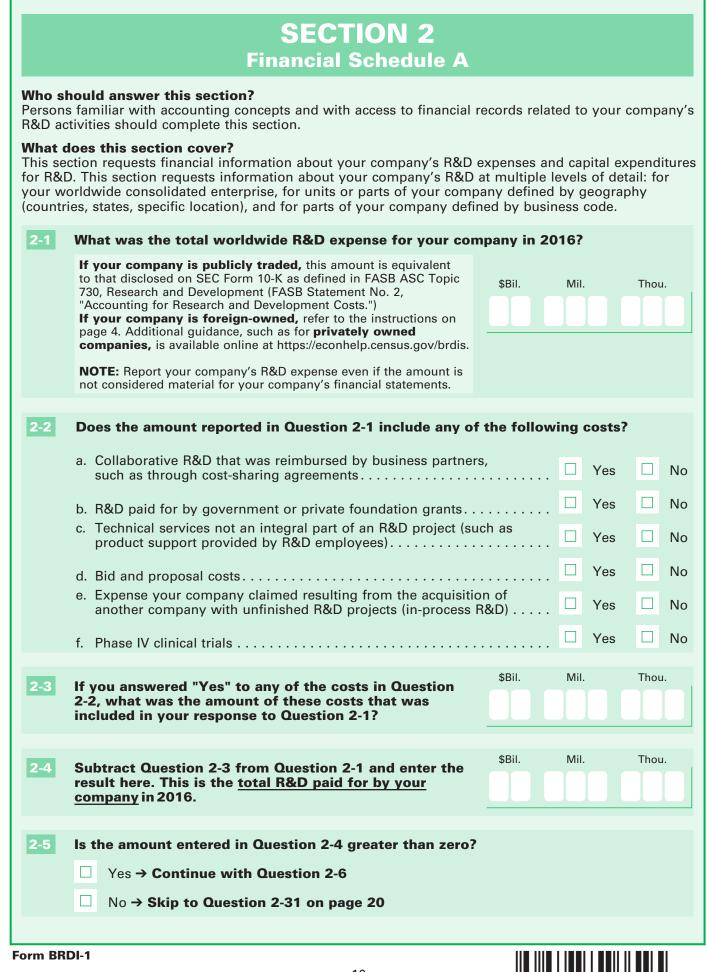
Process innovation		-
A process innovation is the implementation of a <b>new</b> or <b>significantly</b> improved production process, distribution method, or support activity for your goods or services.		TION
<ul> <li>Process innovations must be new to your company, but they do not need to be new to your market.</li> <li>The innovation could have been originally developed by your company or by other companies.</li> <li>Exclude purely organizational innovations.</li> </ul>		SEC
<b>1-14</b> During the three years 2014 to 2016, did your company introduce:		
	1	

No

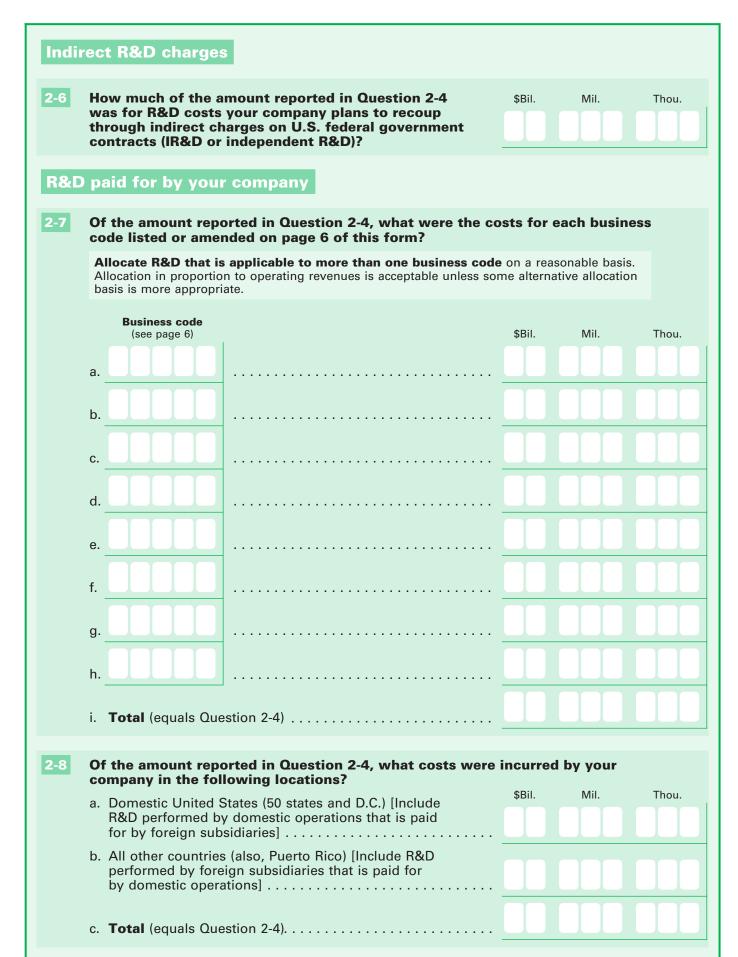
No

No

E	xclude purely organizational innovations.		
	During the three years 2014 to 2016, did your company introduce:		
i	a. New or significantly improved methods of manufacturing or producing goods or services?	Yes	
	<ul> <li>New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services?</li> </ul>	Yes	
	c. New or significantly improved supporting activities for your processes, such as maintenance systems or operations for processes.	Yes	
	purchasing, accounting, or computing?	 	



Form BRDI-1



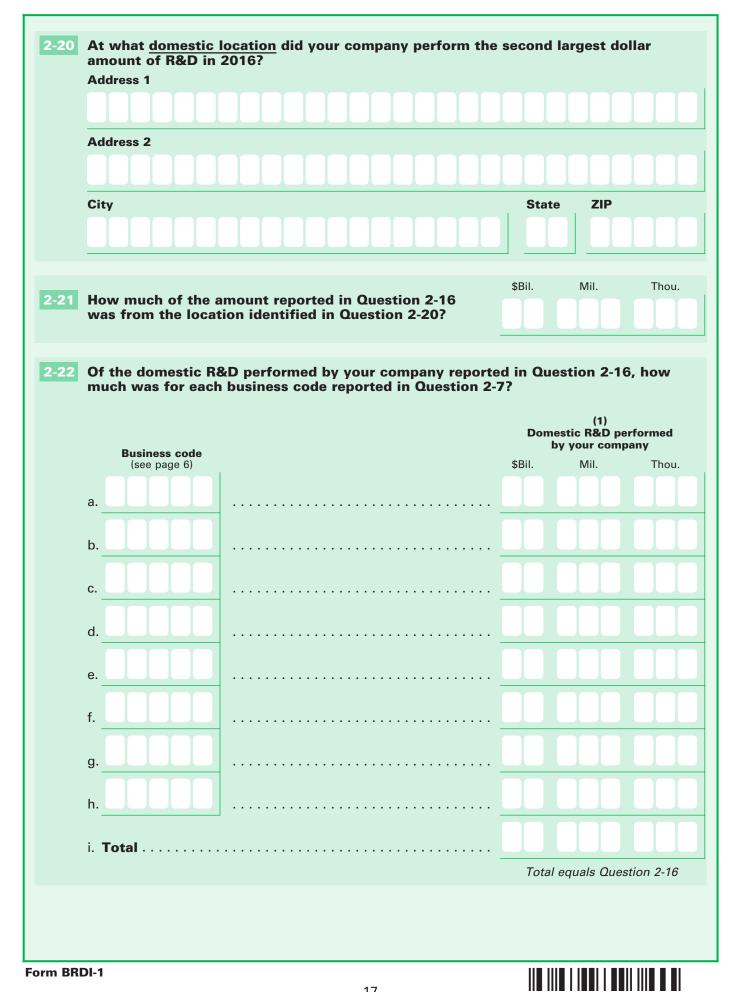
<b>2-9</b> Copy the amount from Question 2-8, line a. This is the total <u>domestic <b>R&amp;D</b> paid for by your company</u> in 2016.	\$Bil. Mil. Thou.
<b>2-10</b> Copy the amount from Question 2-8, line b. This is the total <u>foreign R&amp;D paid for by your company</u> in 2016.	\$Bil. Mil. Thou.
2-11 How much of the (1) domestic, (2) foreign, and (3) total v your company in 2016 was for each of the following typ (1) Domestic (2) Foreign	
<u>\$Bil. Mil. Thou.</u> a. Salaries, wages, and fringe benefits	<u>\$Bil. Mil. Thou.</u>
b. Stock-based compensation	
c. Leased or temporary staffing, including on-site consultants, working	g on R&D
d. Expensed equipment	
e. Materials and supplies	
f. Leased facilities and equipment	
g. Depreciation and amortization on R&D property and equipment	
h. Royalties and licensing fees (including payments made to others for the use property used in your company's R&D)	of patents and other forms of intellectual
i. Payments to business partners for collaborative R&D	
j. Purchased R&D services (if your company is foreign-owned, include paym	nents to your foreign owner for R&D)
Question continues on next page	
Form BRDI-1	

	(1) Domestic			(2) Foreign			Total world	lwide
<u>\$Bil.</u>	Mil.	<u>Thou.</u>	<u>\$Bil.</u>	Mil.	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	Thou
All other pu	urchased ser	vices excep	ot R&D					
All other co	osts (including	administrative	e and overhead	d costs <b>clearl</b> y	y associated	l with your	· company's	<b>R&amp;D</b> )
Total								
Total	equals Questi	on 2-9	Total e	quals Questi	on 2-10	То	tal equals Qu	uestion 2-4
12 Add 2	-11, lines i	and i for e	ach colum	n and en	tor the re	sult horo		
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This is         \$Bil.         14       Copy f         This is       your c         15       Of the follow         nada       erto Rico .         Europe	s R&D perference (1) Domestic Mil. the amount s the <u>foreig</u> company in e amount reving locatio \$Bil. 	Thou. Thou. from Que n R&D pai 2016. ported in ns? For full lis Mil.	\$Bil. Section 2-13 id for and particular st of countries in e Thou.	any. (2) Foreign Mil. 2, column 2 performed 2-14, how each region see C Belgiun Czech	Thou. 2. by much R& buestion by Que m Rep ark	\$Bil. \$Bil. \$Bil. <b>D was po</b> stion Guidance \$Bil.	(3) Total world Mil. Mil.	Iwide Thou Thou Thou
This is         \$Bil.         4         Copy 1         This is         your c         5         Of the follow         nada         erto Rico .	s R&D perference (1) Domestic Mil. the amount s the <u>foreig</u> company in e amount reving locatio \$Bil. 	Thou. Thou. from Que n R&D pai 2016. ported in ns? For full lis Mil.	\$Bil. Section 2-13 id for and particular st of countries in e Thou.	any. (2) Foreign Mil. 2, column 2 performed 2-14, how each region see C Belgiun Czech	Thou. 2. by much R& buestion by Que m Rep	\$Bil. \$Bil. \$Bil. <b>D was po</b> stion Guidance \$Bil.	(3) Total world Mil. Mil.	Iwide Thou Thou Thou

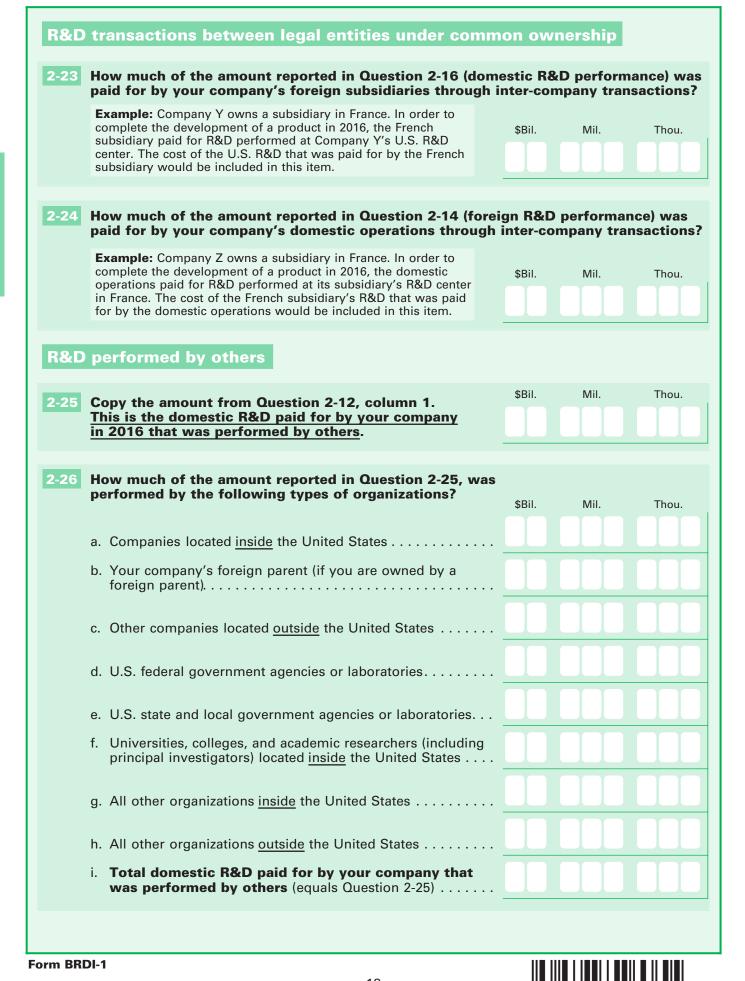
2-15 (Continue	<b>d)</b> \$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.	
France				Mexico				
Germany				Other Latin America/OWH				
Hungary				Asia and Pacific	\$Bil.	Mil.	Thou.	
Ireland				Australia				
ltaly				China				
Luxembourg				Hong Kong				
Netherlands				India				
Norway				Indonesia				
Poland				Japan				
Russia				Malaysia				
Spain				New Zealand				
Sweden				Singapore				
Switzerland				South Korea				
Turkey				Taiwan				
United Kingdom				Thailand				
Other Europe				Other Asia/ Pacific				
Latin America/ Other Western Hemisphere	\$Bil.	Mil.	Thou.	Middle East	\$Bil.	Mil.	Thou.	
Argentina				Israel				
Brazil				Other Middle East				
Chile								
		Qu	estion conti	nues on next page				
form BRDI-1								

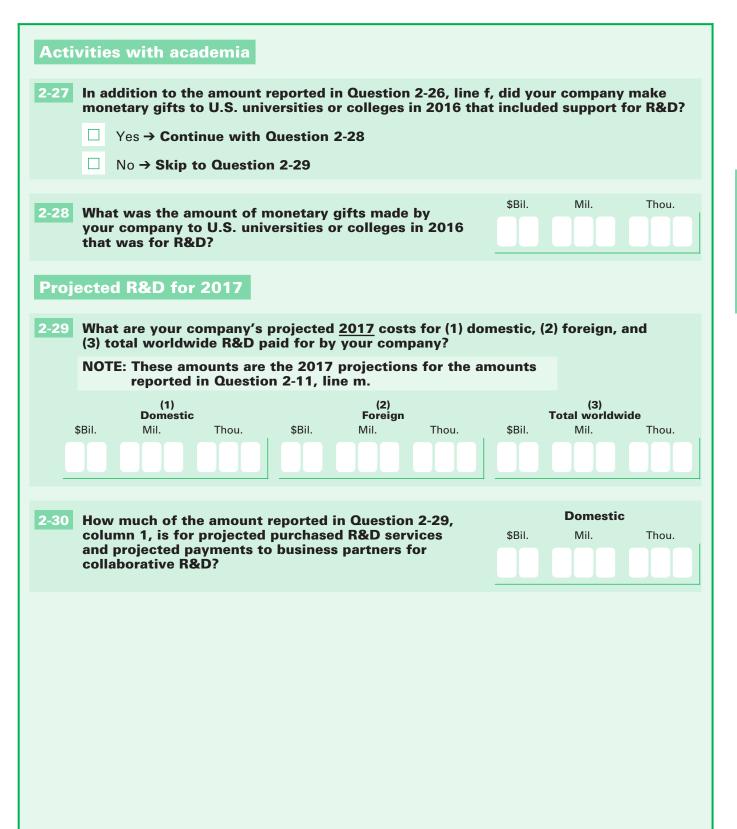
2-15 (Continue	d)						
Africa	\$Bil.	Mil.	Thou.	1	\$Bil.	Mil.	Thou.
South Africa				<b>Total</b> (equals Question 2-14)			
Other Africa							
2-16 Copy the	amount f	from Quest	ion 2-13	column 1	\$Bil.	Mil.	Thou.
This is the	e <mark>domest</mark>	ic R&D pai					
by your co	ompany i	n 2016.					
2-17 How much (including			orted in C	Question 2-16 was p	erforme	d in each s	state
	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
Alabama				Indiana			
Alaska				lowa			
Arizona				Kansas			
Arkansas				Kentucky			
California				Louisiana			
Colorado				Maine			
Connecticut				Maryland			
Delaware				Massachusetts			
District of Columbia				Michigan			
Florida				Minnesota			
Georgia				Mississippi			
Hawaii				Missouri			
ldaho				Montana			
Illinois				Nebraska			
		Que	stion conti	nues on next page			

2-17 (Continue	d)						
	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
Nevada				South Carolina			
New Hampshire				South Dakota			
New Jersey				Tennessee			
New Mexico				Texas			
New York				Utah			
North Carolina				Vermont			
North Dakota				Virginia			
Ohio				Washington			
Oklahoma				West Virginia			
Oregon				Wisconsin			
Pennsylvania				Wyoming			
Rhode Island				<b>Total</b> (equals Question 2-16)			
R&D in 20 Address 1	lomesti 016?	<u>c location</u>	did your co	mpany perform the I	argest de	ollar amo	ount of
Address 2							
City					State	ZIP	
			reported in C tified in Que	Question 2-16 estion 2-18?	\$Bil.	Mil.	Thou.
Form BRDI-1				16			



**SECTION 2** 





Form BRDI-1

Capital expenditures	
<b>2-31</b> What was the amount of your company's capital expenditures in the domestic United States in 2016?	\$Bil. Mil. Thou.
<b>2-32</b> How much of the amount reported in Question 2-31 was for <u>R&amp;D operations</u> ?	\$Bil. Mil. Thou.
<b>2-33</b> How much of the amount reported in Question 2-32 was for the following?	\$Bil. Mil. Thou.
a. Structures	
c. Capitalized software	
<ul> <li>d. All other capital expenditures for R&amp;D operations</li> <li>e. Total domestic capital expenditures for R&amp;D (equals Question 2-32)</li> </ul>	
<b>Reporting information</b> <b>2-34</b> Is the information in this section reported for the 2016 ca	alendar vear?
<ul> <li>Yes</li> <li>No → Enter time period covered below:</li> </ul>	
<b>rm BRDI-1</b> 20	

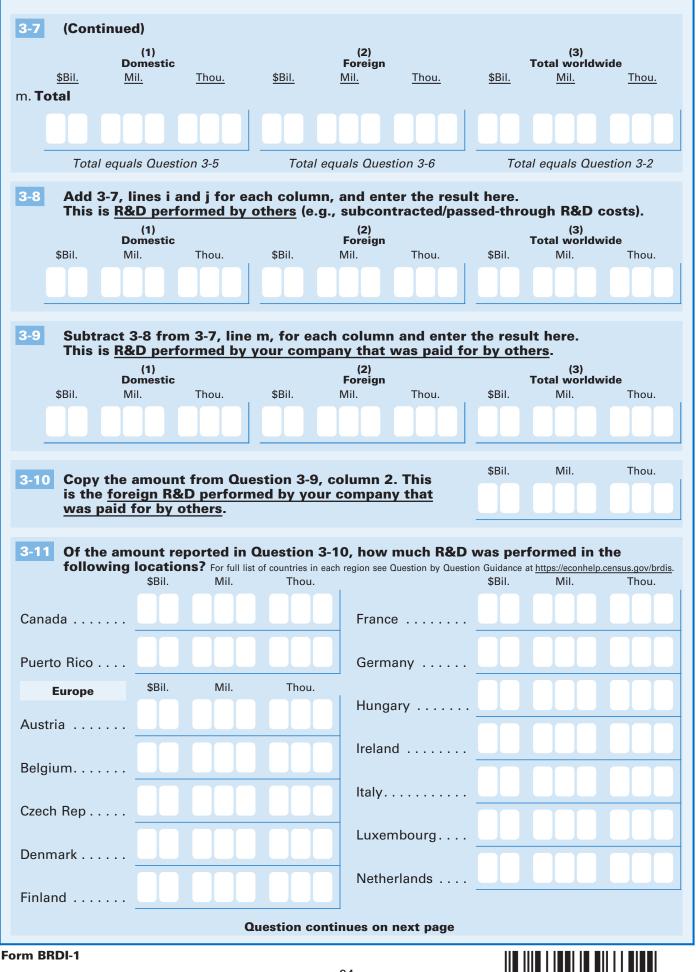
### **SECTION 3 Financial Schedule B** Who should answer this section? Persons familiar with accounting concepts and with access to financial records related to your company's R&D activities should complete this section. What does this section cover? This section requests financial information about your company's costs for work that was funded, paid for, or reimbursed by others. This section requests information about these costs at multiple levels of detail: for your worldwide consolidated enterprise, for units or parts of your company defined by geography (countries, states), and for parts of your company defined by business code. 3-1 What were your company's total worldwide costs (both direct and indirect) in 2016 for the following that were funded, paid for, or reimbursed by others not owned by your company? Exclude: Costs that were paid for by your company, such as those reported in Question 2-4 Payments in excess of the actual cost of the work performed (such as profit or fees) \$Bil. Mil. Thou. a. R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent)..... b. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements. . . . . . c. R&D paid for by government or private foundation grants . . d. Defense R&D goods or services provided as a prime or as a sub, to the government and/or government contractors..... Exclude: Costs for projects that have achieved technical feasibility, such as low-rate initial production. Additional guidance is available online at https://econhelp.census.gov/brdis. e. Medical nonclinical R&D services provided to others f. Medical clinical trial Phase I-III services provided to others not owned by your company (include pass-through costs) . . g. Nondefense custom software development and/or computer systems designed for others not owned by your company..... **Exclude:** • Software development that does not depend on a scientific or technological advance, such as adding functionality to existing application programs, debugging systems, and adapting existing software h. Prototype development, production, and testing for customer's products prior to their introduction to the market (excluding defense-related prototyping reported i. All other R&D services, not included above, provided to the Federal Government or to others not owned by your company..... j. Total......

**SECTION 3** 

Form BRDI-1

3-2	Copy the amount from Question 3-1, line j. This is the <u>total <b>R&amp;D</b> paid for by others</u> in 2016.	\$Bil.	Mil.	Thou.
3-3	Is the amount entered in Question 3-2 greater than zero?         □       Yes → Continue with Question 3-4         □       No → Skip to Section 4 on page 35			
R&C	paid for by others			
3-4	Of the amount reported in Question 3-2, what costs were company in the following locations?	incurred b \$Bil.	<b>y your</b> Mil.	Thou.
	a. Domestic United States (50 states and D.C.)			
	b. All other countries (also, Puerto Rico)			
	c. Total (equals Question 3-2)			
3-5	Copy the amount from Question 3-4, line a. This is the total <u>domestic R&amp;D paid for by others</u> in 2016.	\$Bil.	Mil.	Thou.
3-6	Copy the amount from Question 3-4, line b. This is the total <u>foreign R&amp;D paid for by others</u> in 2016.	\$Bil.	Mil.	Thou.

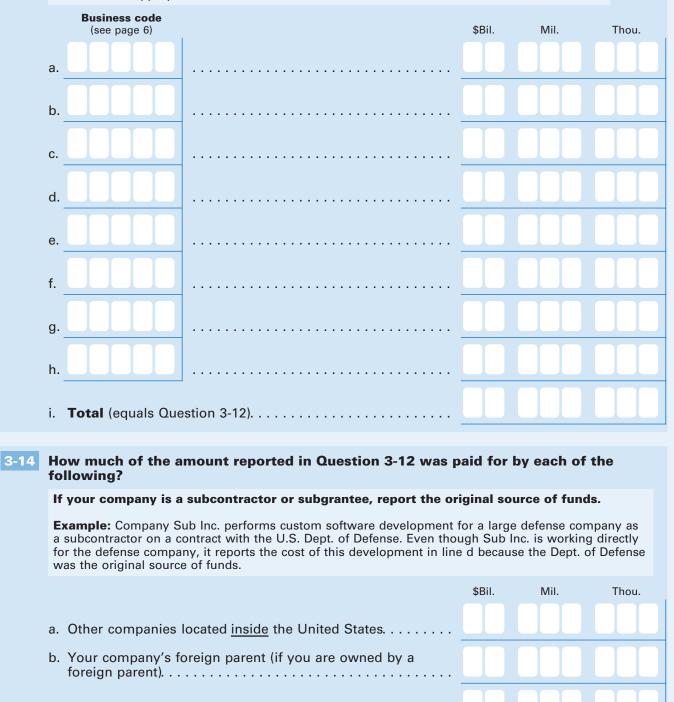
3	-7				ie (1) dome vas for eac						le R&D paid for by
		<b>4</b> 51		(1) omestic		<b>4</b> .5.1		2) eign	-	<b>6</b> 54	(3) Total worldwide
a.	S	<u>\$Bil.</u> Salaries,	<u>Mi</u> wages,		<u>Thou.</u> ringe benefi	<u>\$Bil.</u> ts	<u>Mil.</u>		<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil. Thou.</u>
b.	. 5	Stock-ba	ised cor	npens	ation						
c.	L	eased c	or temp	orary s	staffing, incl	uding o	n-site cons	ultants	s, working	on R&D	
d.	. E	xpense	d equip	ment							
e.	N	/laterials	s and su	upplies	3						
f.	L	eased f	acilities	and e	quipment						
g.	. C	Deprecia	ation an	d amo	rtization on	R&D pr	operty and	l equip	ment		
h.	, F	loyalties	s and lic sed in yo	censing ur comp	g fees (includ bany's R&D)	ing paym	ents made to	others	for the use o	of patents a	nd other forms of intellectual
i.	P	ayment	ts to bu	siness	partners for	r collabo	orative R&I	D			
j.	P	urchase	ed R&D	servic	es (if your co	mpany is	foreign-ow	ned, inc	lude payme	ents to you	Ir foreign owner for R&D)
k.	A	All other	<sup>-</sup> purcha	ised se	ervices exce	pt R&D					
١.	A	All other	r costs (i	includin	g administrativ	re and ove	erhead costs	clearly	associated	with your	company's R&D)
					(	Question	o continues	s on ne	ext page		
Forr	n I	BRDI-1									
							23				



3-11 (Continued	<b>d)</b> \$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
Norway				Hong Kong			
Poland				India			
Russia				Indonesia			
Spain				Japan			
Sweden				Malaysia			
Switzerland				New Zealand			
Turkey				Singapore			
United Kingdom				South Korea			
Other Europe				Taiwan			
Latin America/ Other Western Hemisphere	\$Bil.	Mil.	Thou.	Thailand			
Argentina				Other Asia/ Pacific			
Brazil				Middle East	\$Bil.	Mil.	Thou.
Chile				lsrael			
Mexico				Middle East	\$Bil.	Mil.	Thou.
Other Latin America/OWH				Africa South Africa			
Asia and Pacific	\$Bil.	Mil.	Thou.	Other Africa			
Australia				Total (equals			
China				Question 3-10)			
This is the	domest	tic R&D p	stion 3-9, co erformed by by others.		\$Bil.	Mil.	Thou.
orm BRDI-1				25			

# **3-13** How much of the domestic **R&D** performed by your company that was paid for by others reported in Question 3-12 was for each business code listed or amended on page 6 of this form?

Allocate R&D that is applicable to more than one business code on a reasonable basis. Allocation in proportion to operating revenues is acceptable unless some alternative allocation basis is more appropriate.



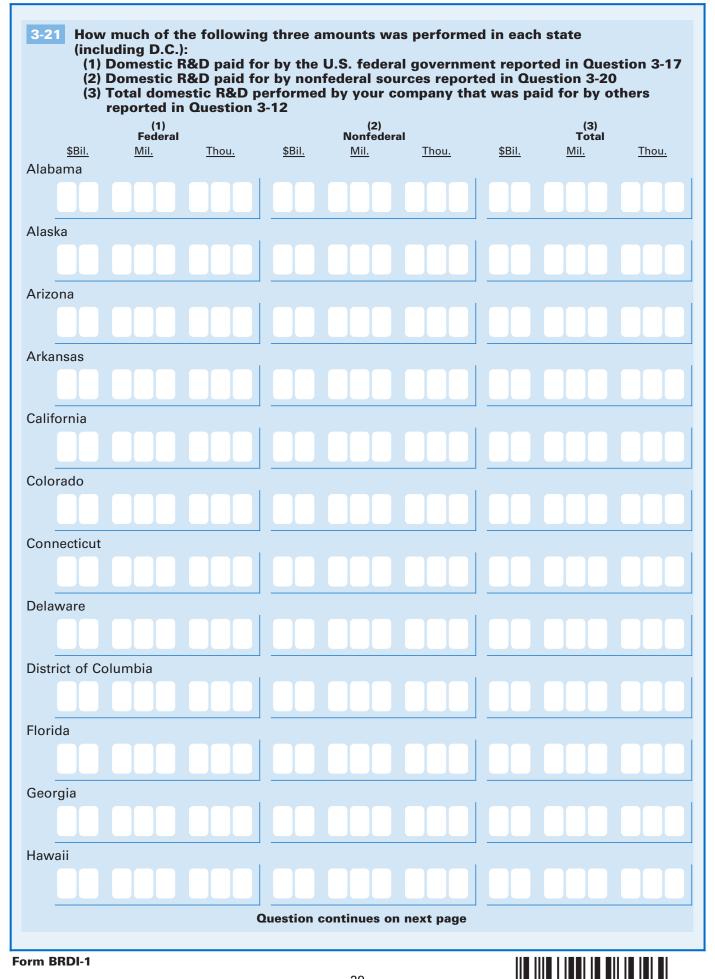
d. U.S. federal government agencies or laboratories.....

c. Other companies located outside the United States .....

Question continues on next page

3-14	(Co	onti	nue	ed)				\$Bil.	Mil.	Thou.
	e.	U.S	. sta	ate (	gov	ernn	nent agencies or laboratories			
							es, and academic researchers (including cors) located inside the United States			
	g.	All	othe	er o	rga	nizat	ions <u>inside</u> the United States			
	h.	All	othe	er o	rga	nizat	ions <u>outside</u> the United States			
	i.	Tot	al (	equ	als	Que	stion 3-12)			
3-15	Ad	d Q	ues	stio	n 3	-14,	lines a, b, and c, and enter the	\$Bil.	Mil.	Thou.
	res		hei	r <b>e.</b> '	Thi	s is '	the <u><b>R&amp;D</b> that was paid for by</u>			
3-16							siness codes printed below, allocate th			
							d on the industries of the companies t Iditional codes from pages 46-47 in th			
		B	usir	iess	cod	le	Description	\$Bil.	Mil.	Thou.
	a.	3	2	5	4	3	Biotechnology-based pharmaceutical and biological products (except diagnostics)			
	b.	3	2	5	4	1	Pharmaceutical, medicinal, and botanical products manufacturing			
	c.	3	3	5	0	0	Electrical equipment, appliances, and components manufacturing			
	d.	3	3	4	4	0	Semiconductor and other electronic components manufacturing			
	e.	3	3	9	1	0	Medical equipment and supplies manufacturing			
	f.	3	3	6	1	0	Motor vehicles manufacturing			
	g.									
	h.									
	i.									
	j.	To	tal	(eai	iale	0116	estion 3-15)			
	J.	10	-01	,oqu		Que				

3-17	Copy the amount from Question 3-14, line d. This	\$Bil.	Mil.	Thou.
5-17	is <u>domestic R&amp;D performed by your company that was</u> paid for by the U.S. federal government.			
3-18	How much of the amount reported in Question 3-17 was p for by the following agencies?	aid		
		\$Bil.	Mil.	Thou.
	a. Department of Defense			
	b. Department of Energy			
	c. National Aeronautics and Space Administration			
	d. National Institutes of Health			
	e. Department of Homeland Security			
	f. Department of Transportation			
	g. Environmental Protection Agency.			
	h. National Science Foundation			
	i. All other, please specify:			
	j. <b>Total</b> (equals Question 3-17)			
3-19	How much of the amount reported in Question 3-17 was p	erforme	d under t	he
	following types of agreements?	\$Bil.	Mil.	Thou.
	a. Contracts (include direct or prime contracts and subcontracts)			
	b. Grants, reimbursements, and all other agreements			
	c. Total (equals Question 3-17)			
3-20	Subtract Question 3-17 from Question 3-12 and enter the result here. This is the domestic R&D performed	\$Bil.	Mil.	Thou.
	by your company that was paid for by nonfederal sources.			
orm BR	<b>DI-1</b> 28			



**SECTION 3** 

<u>\$Bil.</u>	inued) (1) Federal <u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	(2) Nonfederal <u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	(3) Total <u>Mil.</u>	<u>Thou.</u>
Idaho								
Illinois								
Indiana								
lowa								
Kansas								
Kentucky								
Louisiana								
Maine								
Maryland								
Massachusett	s							
Michigan								
Minnesota								
Mississippi								
		C	Question co	ontinues on n	ext page			
orm BRDI-1				30				

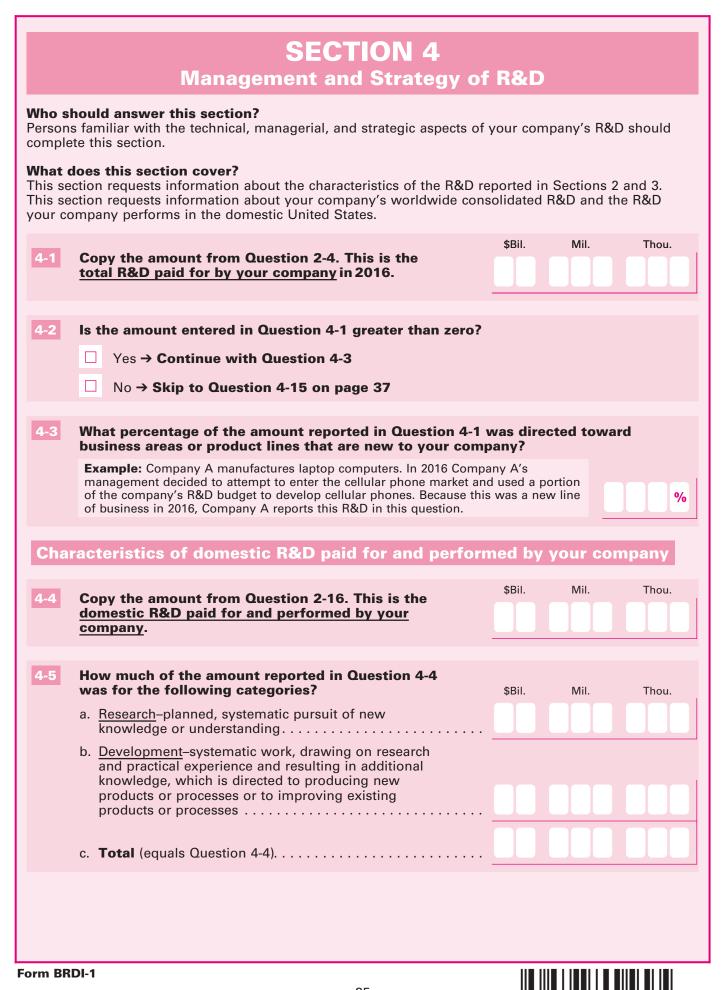
3-21 (Contin				(2)			(3)	
<u>\$Bil.</u>	(1) Federal <u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	(2) Nonfederal <u>Mil.</u>	<u>Thou.</u>	<u>\$Bil.</u>	<b>(3)</b> Total <u>Mil.</u>	<u>Thou.</u>
Missouri								
Montana								
Nebraska								
Nevada								
New Hampshir	e							
New Jersey								
New Mexico								
New York								
North Carolina								
North Dakota								
Ohio								
Oklahoma								
Oregon								
		Qı	lestion col	ntinues on n	ext page			

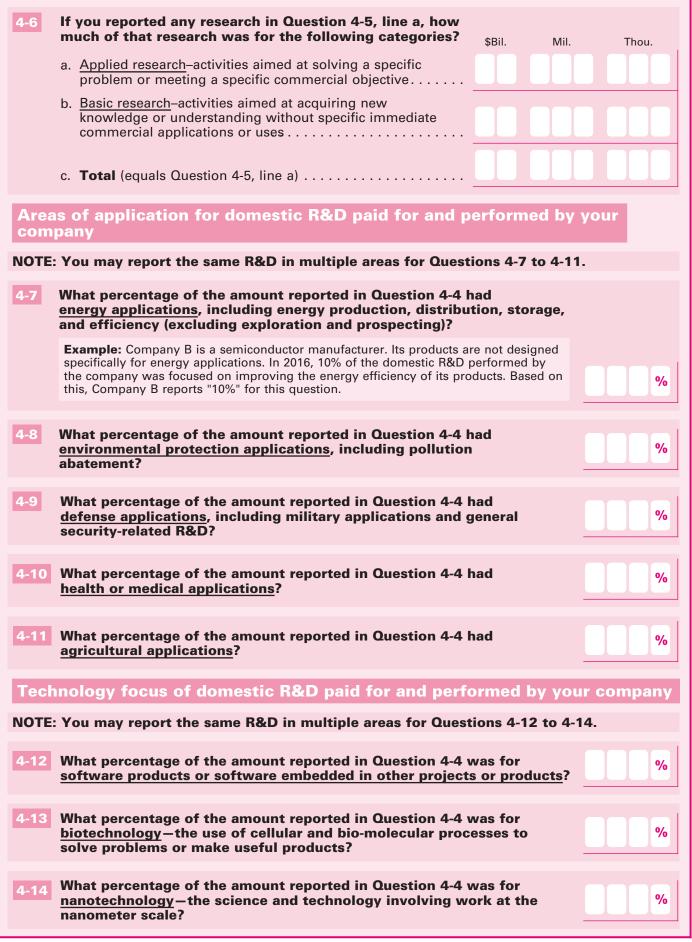
3-21 (Conti	nued) (1) Federal			(2) Nonfederal			(3) Total	
<u>\$Bil.</u>	Federal Mil.	<u>Thou.</u>	<u>\$Bil.</u>	Nonfederal Mil.	<u>Thou.</u>	<u>\$Bil.</u>	Total Mil.	<u>Thou.</u>
Pennsylvania								
Rhode Island								
South Carolina	1							
South Dakota								
Tennessee								
Texas								
Utah								
Vermont								
Virginia								
Washington								
West Virginia								
Wisconsin								
Wyoming								
		Q	lestion co	ontinues on n	ext page			

31 (Contir <u>\$Bil.</u>	nued) (1) Federal <u>Mil. T</u>	<u>'hou. \$Bi</u>	(2) Nonfedera I. <u>Mil.</u>	al <u>Thou.</u>	<u>\$Bil.</u>	(3) Total <u>Mil.</u>	<u>Thou.</u>
2 At wha			Total equals Ques your company s in 2016?			uals Questi Ilar amou	
Address	-						
Address	s 2						
City					State	ZIP	
		mount repor	ted in Questia	- 0.40	\$Bil.	Mil.	Thou.
		ion identified	d in Question 3				
At what of R&D Address	at <u>domestic l</u> ) that was pa	ocation did y		3-22?	second lar	gest dolla	ar amou
of R&D	at <u>domestic l</u> ) that was pa	ocation did y	d in Question 3	3-22?	second lar	gest dolla	ar amou
of R&D	at <u>domestic l</u> ) that was pa s 1	ocation did y	d in Question 3	3-22?	second lar	gest dolla	ar amou
of R&D Address	at <u>domestic l</u> ) that was pa s 1	ocation did y	d in Question 3	3-22?	second lar	gest dolla	
of R&C Address Address City	at <u>domestic I</u> ) that was part s 1 S 2 D D D D D s 2 D D D D D nuch of the a	ocation did y aid for by oth	d in Question 3	3-22? perform the			Thou.
of R&C Address Address City	at <u>domestic I</u> ) that was part s 1 S 2 D D D D D s 2 D D D D D nuch of the a	ocation did y aid for by oth	d in Question 3	3-22? perform the	State		
of R&C Address Address City	at <u>domestic I</u> ) that was part s 1 S 2 D D D D D s 2 D D D D D nuch of the a	ocation did y aid for by oth	d in Question 3	3-22? perform the	State		

R&D performed by others			
<b>3-26</b> Copy the amount from Question 3-8, column 1. <u>This</u> is the domestic R&D performed by others that was paid for by others.	\$Bil.	Mil.	Thou.
<b>3-27</b> Of the amount reported in Question 3-26, how much R&D was paid for by U.S. federal government agencies or laboratories?	\$Bil.	Mil.	Thou.
Projected R&D paid for by others in 2017			
<b>3-28</b> What are your company's projected <u>2017</u> costs for <b>R&amp;D</b> that will be paid for by others?	\$Bil.	Mil.	Thou.
NOTE: This amount is the 2017 projection for what is reported in Question 3-2.			
<b>3-29</b> How much of the projected costs in 2017 for R&D that v be paid for by others reported in Question 3-28 will be performed by your company in the United States?	\$Bil.	Mil.	Thou.
NOTE: This amount is the 2017 projection for what is reported in Question 3-12.			
<b>3-30</b> How much of the projected costs in 2017 for domestic R performed by your company that will be paid for by other reported in Question 3-29 will be paid for by the U.S. federal government?		Mil.	Thou.
NOTE: This amount is the 2017 projection for what is reported in Question 3-17.			

SECTION 4

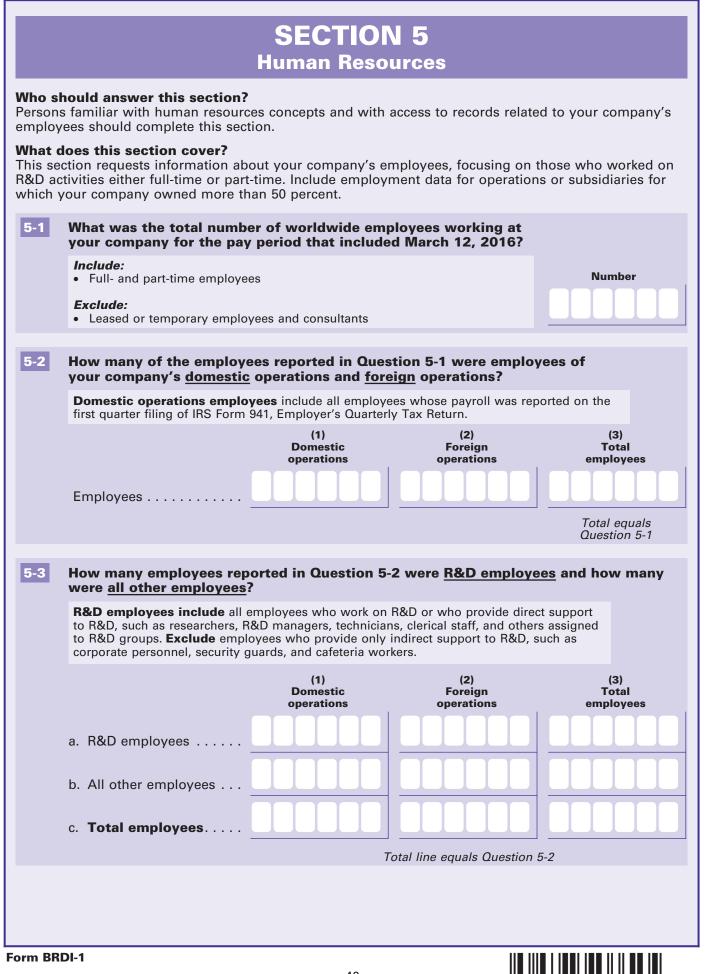




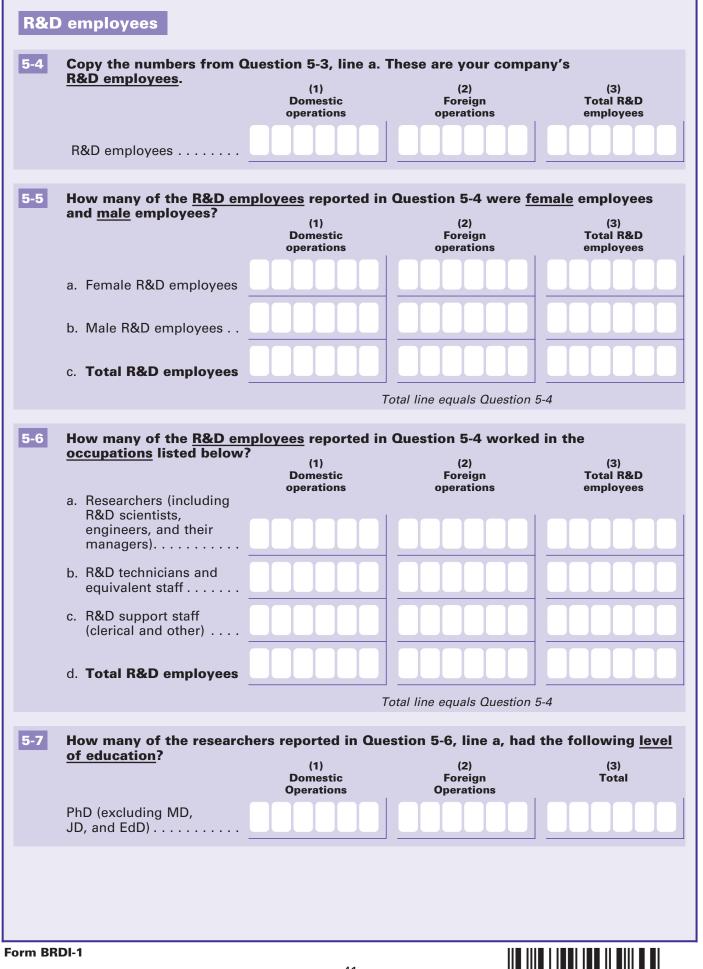
Domestic R&D performed by your company that was	paid for	by oth	ers
<b>4-15</b> Copy the amount from Question 3-12. This is the domestic R&D performed by your company that was paid for by others.	\$Bil.	Mil.	Thou.
<ul> <li>4-16 Is the amount entered in Question 4-15 greater than zero?</li> <li>Pes → Continue with Question 4-17</li> <li>No → Skip to Question 4-32 on page 39</li> </ul>	?		
<ul> <li>4-17 How much of the amount reported in Question 4-15 was for the following categories?</li> <li>a. <u>Research</u>-planned, systematic pursuit of new knowledge or understanding</li> <li>b. <u>Development</u>-systematic work, drawing on research</li> </ul>	\$Bil.	Mil.	Thou.
and practical experience and resulting in additional knowledge, which is directed to producing new products or processes or to improving existing products or processes			
<ul> <li>4-18 If you reported any research in Question 4-17, line a, how much of that research was for the following categories?</li> <li>a. <u>Applied research</u>-activities aimed at solving a specific</li> </ul>	\$Bil.	Mil.	Thou.
<ul> <li>problem or meeting a specific commercial objective</li> <li>b. <u>Basic research</u>-activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses</li> <li>c. <b>Total</b> (equals Question 4-17, line a)</li> </ul>			
4-19 What percentage of the amount reported in Question 4-15			
<ul> <li>4-20 What percentage of the amount reported in Question 4 16</li> <li>4-20 What percentage of the amount reported in Question 4-15</li> </ul>	orage, an		
<ul> <li>4-21 What percentage of the amount reported in Question 4-15</li> </ul>	n	_	
defense applications, including military applications and security-related R&D?	general		%

<b>4-22</b> What percentage of the amount reported in Question 4-15 had <u>health or medical applications</u> ?	%
<b>4-23</b> What percentage of the amount reported in Question 4-15 had <u>agricultural applications</u> ?	
Technology focus of domestic <b>R&amp;D</b> performed by your company the paid for by others	nat was
NOTE: You may report the same R&D in multiple areas for Questions 4-24 to 4-2	6.
<b>4-24</b> What percentage of the amount reported in Question 4-15 was for software products or software embedded in other projects or products?	
<b>4-25</b> What percentage of the amount reported in Question 4-15 was for <u>biotechnology</u> —the use of cellular and bio-molecular processes to solve problems or make useful products?	<b></b>
<b>4-26</b> What percentage of the amount reported in Question 4-15 was for <u>nanotechnology</u> —the science and technology involving work at the nanometer scale?	%
Domestic <b>R&amp;D</b> performed by your company that was paid for by the U.S. federal government	le
4-27 Copy the amount from Question 3-17. This is domestic <u>R&amp;D performed by your company that was paid for by</u> <u>the U.S. federal government</u> .	Thou.
<b>4-28</b> Is the amount entered in Question 4-27 greater than zero?	
Yes → Continue with Question 4-29	
No → Skip to Question 4-32 on page 39	
4-29 How much of the amount reported in Question 4-27 was for the following categories? \$Bil. Mil.	Thou.
a. <u>Research</u> -planned, systematic pursuit of new knowledge or understanding	
<ul> <li>b. <u>Development</u>-systematic work, drawing on research and practical experience and resulting in additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.</li> </ul>	
c. <b>Total</b> (equals Question 4-27)	
Form BRDI-1	

<b>4-30</b> If you reported any research in Question 4-29, line a, how much of that research was for the following categories?	\$Bil.	Mil.	Thou.
<ul> <li><u>Applied research</u>-activities aimed at solving a specific problem or meeting a specific commercial objective</li> </ul>			
b. <u>Basic research</u> -activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses			
c. <b>Total</b> (equals Question 4-29, line a)			
<b>4-31</b> What percentage of the amount reported in Question 4-27 software products or software embedded in other projects			%
Characteristics of foreign R&D paid for and performed	d by y	our com	pany
<b>4-32</b> Copy the amount from Question 2-14. <u>This is the foreign R&amp;D paid for and performed by your company</u> .	\$Bil.	Mil.	Thou.
<b>4-33</b> How much of the amount reported in Question 4-32 was for the following categories?	\$Bil.	Mil.	Thou.
a. <u>Research</u> –planned, systematic pursuit of new knowledge or understanding			
b. <u>Development</u> -systematic work, drawing on research and practical experience and resulting in additional knowledge, which is directed to producing new products or processes or to improving existing products or processes			
c. <b>Total</b> (equals Question 4-32)			
Characteristics of foreign R&D performed by your cor for by others	npany	that was	s paid
<b>4-34</b> Copy the amount from Question 3-10. <u>This is the foreign R&amp;D performed by your company and paid for by others</u> .	\$Bil.	Mil.	Thou.
4-35 How much of the amount reported in Question 4-34			
<ul><li>was for the following categories?</li><li>a. <u>Research</u>-planned, systematic pursuit of new</li></ul>	\$Bil.	Mil.	Thou.
<ul> <li>knowledge or understanding</li> <li>b. <u>Development</u>-systematic work, drawing on research and practical experience and resulting in additional knowledge, which is directed to producing new products or processes or to improving existing products or processes</li> </ul>			
c. <b>Total</b> (equals Question 4-34)			
Form BRDI-1			



Form BRDI-1



Dom	es	tic full-time equivalents (FTEs)
5-8	nu	the domestic R&D employees reported in Question 5-4, column 1, what was the mber of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, her full-time employees not working solely on R&D, and part-time employees?
	a.	FTEs for full-time R&D employees       Number         Count the number of full-time employees who work only on R&D       Image: Count of the second
		<b>Example:</b> 50 full-time R&D employees worked only on R&D = 50 FTEs
	b.	FTEs for other full-time employees not working solely on R&D Use the share of the time they work on R&D to calculate the number of FTEs
		<b>Example:</b> 60 full-time employees averaged one-fourth of their time on R&D = 15 FTEs
	C.	FTEs for part-time employees working on R&D Use the share of a full-time week (such as 40 hours) that they work on R&D to calculate the FTEs
		<b>Example:</b> 20 part-time employees averaged 20 hours a week on R&D activities = 10 FTEs
	d.	Total FTEs
		Total FTEs should not exceed Question 5-4, column 1.

5-9	th er	f the domestic researchers reported in Question 5-6, line a, column 1, what was e number of full-time equivalents (FTEs) for R&D activity for full-time R&D nployees, other full-time employees not working solely on R&D, and part-time nployees?
		Number
	a.	FTEs for full-time researchers
		Count the number of full-time employees who work only on R&D
		<b>Example:</b> 50 full-time R&D scientists worked only on R&D = 50 FTEs
	b.	FTEs for other full-time researchers not working solely on R&D
		Use the share of the time they work on R&D to calculate the number of FTEs
		<b>Example:</b> 60 full-time managers averaged one-fourth of their time on R&D = 15 FTEs
	c.	FTEs for part-time researchers working on R&D
		Use the share of a full-time week (such as 40 hours) that they work on R&D to calculate the FTEs
		<b>Example:</b> 20 part-time employees averaged 20 hours a week on R&D activities = 10 FTEs
	d.	
		Total FTEs should not exceed Question 5-6, line a, column 1.
5-10	w	ow many of the domestic researchers reported in Question 5-6, line a, column 1, ere non-U.S. citizens employed in the United States under a temporary visa, such H-1B or L-1? (1) Domestic Operations
	R	esearchers employed under a temporary visa

SECTION 6			
Intellectual Property and Technology Transfer			
Who should answer this section? Persons with an understanding of your company's general business strategy and knowledge of its patenting, licensing, and other activities related to intellectual property should complete this section.			
<b>What does this section cover?</b> This section requests information about intellectual property and technology transfer activities such as: patents, patent licensing, protection of intellectual property, and transfer of intellectual property.			
<b>Are responses to this survey confidential?</b> Yes. Your responses are completely confidential under Title 13, United States Code, Section 9, and are seen only by persons sworn to uphold the confidentiality of Census Bureau information. Data provided will be used only to publish summary statistics that do not identify individual companies. The law also provides that copies of reports retained in your files are immune from legal process. In addition, reported data are exempt from requests made under the Freedom of Information Act.			
Total patents and utility patents			
6-1 How many total patents did your company <u>apply</u> for in 2016 from the U.S. Patent and Trademark Office (USPTO)?			
Number			
6-2 Of the patent applications reported in Question 6-1, what was the number of <u>nonprovisional utility patent</u> applications?			
6-3 What percentage of the nonprovisional utility patent applications reported in Question 6-2 has your company applied for or plans to apply for in foreign jurisdictions?			
6-4 What percentage of the nonprovisional utility patent applications reported in Question 6-2 was for inventions that originated within your company's organized R&D activities?			
6-5 What percentage of your company's inventions <u>considered</u> for patenting in 2016 resulted in nonprovisional utility patent applications?			
6-6 How many <u>utility patents</u> were <u>issued</u> to your company in 2016 by the USPTO?			
Utility patent sales and licensing to others			
6-7 How much revenue did your company receive in 2016 from the sale of utility patents?			
6-8       How much revenue did your company receive in 2016 from utility patent licensing?       \$Bil.       Mil.       Thou.			

SECTION 6

6	Vas any of the revenue reported in Questions 6-7 or -8 received from companies or organizations located outside the United States?			Yes		No
Utility	patent purchases and licensing <u>from others</u>					
	low much did your company pay others in 2016 o purchase utility patents?	\$Bil.	Mil.		Thou	
	low much did your company pay others in 2016 o license utility patents?	\$Bil.	Mil.		Thou	
0	Vere any of the payments reported in Questions 6-10 or 6-11 made to companies or organizations located outside the United States?			Yes		No
Intelle	ectual property transfer activities					
6-13 C	Did your company perform the following activities in 201	6?				
а	. Transferred intellectual property (IP) to others not owned by y company through participation in technical assistance or "know how" agreements			Yes		No
b	<ul> <li>Received IP from others not owned by your company through participation in technical assistance or "know how" agreemen</li> </ul>			Yes		No
с	. Transferred IP to a spin-off or spin-out of your company			Yes		No
d	. Received IP from a parent company as part of a spin-off or sp	oin-out		Yes		No
e	. Acquired more than 50% ownership in another company for t primary purpose of acquiring their IP			Yes		No
f.	Acquired any financial interest in another company in order to gain access to their IP			Yes		No
g	Participated in cross-licensing agreements—the agreements in two or more parties grant a license to each other for the use the subject matter claimed in one or more of the patents own by each party.	of ied		Yes		No
h	. Allowed free use of patents or other IP owned by your compa (for example, open source software)			Yes		No
i.	Made use of open source patents or other freely available IP owned by your company			Yes		No

(used in Sections 1, 2, and 3)

## **Aerospace and Defense**

- Aircraft engine and engine parts manufacturing 33642 33641 Aircraft manufacturing
- 33644 Guided missiles, space vehicles, and parts manufacturing
- 33692 Military armored vehicle, tank, and tank components manufacturing
- 33452 Search, detection, navigation, guidance, aeronautical, and nautical system and instruments manufacturing
- 33660 Ship and boat building
- 33643 Other aircraft parts and auxiliary equipment manufacturing

#### Automobiles, Motorcycles, and Components

- 33620 Motor vehicle body and trailer manufacturing
- 33630 Motor vehicle parts manufacturing
- 33610 Motor vehicles manufacturing
- 33691 Motorcycle, bicycle, and parts manufacturing
- Railroad rolling stock manufacturing 33651
- 33660 Ship and boat building
- 33699 All other transportation equipment manufacturing

#### **Capital Equipment**

- 33311 Agricultural machinery and equipment manufacturing
- 33332 Commercial, service industry, temperature control, and airflow control machinery manufacturing
- 33312 Construction machinery manufacturing
- 33500 Electrical equipment, appliances, and components manufacturing
- 33360 Engine, turbine, and power transmission equipment manufacturing
- 33322 Industrial machinery manufacturing, except semiconductor machinery
- 33390 Metalworking and other general purpose machinery manufacturing
- 33319 Mining, oil, and gas field machinery and equipment manufacturing
- 33331 Photographic and photocopying equipment manufacturing

- **Chemicals and Materials** 32402 Asphalt paving, roofing, and saturated materials manufacturing 32510 Basic chemicals manufacturing 32790 Cement, concrete, lime, gypsum, and other nonmetallic mineral product manufacturing 32710 Clay and glass products manufacturing 21200 Mining Paint, adhesive, and other chemical 32592 manufacturing 32200 Paper manufacturing 32530 Pesticide, fertilizer, and other agricultural chemical manufacturing 32600 Plastics and rubber products manufacturing 33100 Primary metal manufacturing 32520 Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing 32591 Soap, cleaning compound, and toilet preparations manufacturing 32100 Wood products manufacturing
- 32403 Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal

# **Consumer Goods**

- 33333 Digital cameras manufacturing
- Audio and video equipment manufacturing 33430
- 31210 Beverage manufacturing
- 33200 Fabricated metal products manufacturing
- 31100 Food manufacturing
- 33700 Furniture and related products manufacturing
- 32300 Printing and related support activities
- 32591 Soap, cleaning compound, and toilet preparations manufacturing
- 31990 Textile, apparel, and leather products manufacturing
- 31220 Tobacco manufacturing
- 33990 Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)

#### **Energy and Mining**

- Engine, turbine, and power transmission 33360 equipment manufacturing
- 21200 Mining
- 33319 Mining, oil, and gas field machinery and equipment manufacturing
- Oil and gas extraction 21100
- 32401 Petroleum refineries
- 21300 Support activities for mining, including oil and gas

#### Finance, Insurance, and Real Estate

- 52200 Finance: banking and credit intermediation
- 52400 Insurance carriers and related activities
- 53100 Real estate
- 52310 Securities, commodity contracts, and other financial investments and related activities (including funds and trusts)

#### Healthcare

- 32543 Biotechnology-based pharmaceutical and biological products (except diagnostics)
- 33451 Electromedical, electrotherapeutic, and irradiation apparatus manufacturing
- 62200 Hospitals and nursing care facilities
- In vitro diagnostic substances manufacturing 32542
- 62150 Medical and diagnostic laboratories
- 33910 Medical equipment and supplies manufacturing
- Offices of physicians 62110
- 32541 Pharmaceutical, medicinal, and botanical products manufacturing
- 54173 Research and development services in biotechnology
- 54174 Research and development services in physical, engineering, and life sciences (except biotechnology)
- 62199 Other ambulatory health care services (ambulance, dental, home health care)

### **Information Technology - Goods and Services**

morma	tion recimology - doods and bervices
33333 51801	Digital cameras manufacturing
01001	Cloud computing applications and internet based software services
54150	Computer systems design and related services
33412	Computers and peripheral equipment
	manufacturing, including magnetic and optical media
51800	Data processing, hosting, and related services
33500	Electrical equipment, appliances, and
	components manufacturing
45411	Electronic shopping and electronic auctions
33459	Measuring and control instruments
00400	manufacturing (not listed elsewhere)
33422	Radio, television, and wireless communication equipment manufacturing
33440	Semiconductor and other electronic
00440	components manufacturing
33321	Semiconductor machinery manufacturing
51120	Software publishers (except Internet)
33421	Telephone apparatus manufacturing
	including routers, modems, and gateways
42500	Wholesale electronic markets and
00400	agents and brokers (business to business)
33429	Other communication equipment
	manufacturing (except radio, television, and wireless communication equipment)
51910	Other information services, including
51510	Internet publishing, broadcasting,
	and web search portals

#### **Professional, Scientific, and Technical Services**

54180 Advertising and related services

- 54130 Architectural, engineering, and related services
- 54150 Computer systems design and related services
- 54111 Legal, accounting, tax preparation, bookkeeping and payroll services
- 54160 Management, scientific, and technical consulting services
- 54190 Professional, scientific, and technical services (not listed elsewhere)
- 54173 Research and development services in biotechnology
- 54174 Research and development services in physical, engineering, and life sciences (except biotechnology)
- 54172 Research and development services in social sciences and humanities
- 54140 Specialized design services

### **Telecommunications and Utilities**

- 51500 Broadcasting (except Internet)
- 51740 Satellite telecommunications
- 22100 Utilities
- 56200 Waste management and remediation services
- 51710 Wired telecommunications carriers
- 51720 Wireless telecommunications carriers (except satellite)
- 51790 Other telecommunications (not listed elsewhere)

#### **Other Services**

- 72000 Accommodation and food services
- 56100 Administrative and support services
- 71000 Arts, entertainment, and recreation
- 23000 Construction
- 49200 Couriers, messengers, and express delivery services
- 53300 Lessors of nonfinancial intangible assets (including patent licensing)
- 55100 Management of companies and enterprises
- 42300 Merchant wholesalers, durable goods
- 42400 Merchant wholesalers, nondurable goods
- 51200 Motion picture and sound recording (except Internet)
- 51110 Newspaper, periodical, book, and directory publishers (except Internet)
- 53200 Rental and leasing services
- 44000 Retail trade, except electronic shopping and electronic auctions
- 62400 Social assistance services
- 21300 Support activities for mining, including oil and gas
- 48000 Transportation
- 49300 Warehousing and storage
- 81000 Other services (not listed elsewhere)



Remarks (Please use the space below for any explanations that may help us understand your reported data.)

We estimate this survey will take 15 hours, on average, to complete, including the time for reviewing instructions, researching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: ECON Survey Comments 0607-0912, U.S. Census Bureau, 4600 Silver Hill Road, Room 6H128, Washington, DC 20233. You may e-mail comments to ERD.ALL.GEN.BRDIS@census.gov. Be sure to use ECON Survey Comments 0607-0912 as the subject.

# ~ Thank you for completing your 2016 Business R&D and Innovation Survey ~

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