

2023 ABS Content Draft

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Section A: Company Information

The following section collects information on the operations and structure of this business. All businesses that receive this survey should answer questions in the upcoming section. The reporting unit for the survey is the U.S.-located company, including all majority-owned subsidiaries and divisions regardless of location. **Report only for domestic U.S. operations.**

A.1 CEASED OPERATIONS

Has this business ceased operations?

- Yes
- No – **Skip to 'A.3 BUSINESS OWNERSHIP – FOREIGN-OWNED ENTITY'**

A.2 DATE CEASED OPERATIONS

Print the month and year this business ceased operations.

MM | YYYY

____ | ____

Reporting Instructions: If the ceased-operations date is before January 2022, **skip to SECTION __: CONTACT INFORMATION** on page XX.

If the ceased-operations date is after January 1, 2022, you are still required to complete this survey covering any business activity for 2022, even though this business is not currently operating.

A.3 BUSINESS OWNERSHIP – FOREIGN-OWNED ENTITY

In 2022, was this business a majority-owned subsidiary of a foreign company?

- Yes
- No

Reporting Instructions for Foreign-Owned Companies: If this business is owned by a foreign parent, the reporting unit for the survey is the U.S.-located company, including all majority-owned subsidiaries and divisions located in the domestic United States (50 states and the District of Columbia). For reporting purposes, the foreign parent and any foreign affiliates this company does not own should be treated the same as any business partner, customer, or supplier this business does not own.

A.4 BUSINESS OWNERSHIP – U.S. ENTITY

In 2022, did another U.S. company or other entity own more than 50 percent of this business?

Examples of other entities include estates, trusts, employee stock ownership plans (ESOPs), associations, membership clubs, and cooperatives.

- Yes – **Skip to 'A.6 Business – 10% or More Ownership'**
- No

A.5 BUSINESS OWNERSHIP – GOVERNMENT OR TRIBAL ENTITY

In 2022, was this business owned by a government or tribal entity?

- Yes
- No

A.6 BUSINESS – 10% OR MORE OWNERSHIP

In 2022, did at least one person own 10% or more of this business? Do not count parent companies, estates, trusts or other entities.

- Yes
- No – Select “No” **ONLY** if no person owned 10% or more of this business.

A.7 NUMBER OF OWNERS

In 2022, how many people owned this business?

- *Do not combine two or more owners to create one owner.*
- *Count spouses and partners as separate owners.*
- *Count owners who owned at least 10% of this business.*

- 1 person
- 2 people
- 3 people
- 4 people
- 5 - 10 people
- 11 or more people
- Business is owned by a parent company, estate, trust or other entity
- Do not know

A.8 NUMBER OF W-2 PAID DOMESTIC EMPLOYEES OR EMPLOYEES/OWNERS

For the pay period including March 12, 2022, how many people worked for this business, including those paid through grants? Include both full-time and part-time employees as well as yourself. Include only persons in the United States.

Count each person only once. If none, report zero.

	Number of People
a. Number of owners who received a W-2 issued by this business for salary or wages	_____
b. Number of employees who received a W-2 issued by this business for salary or wages	_____
c. Total	_____

A.9 NUMBER OF DOMESTIC WORKERS WHO DID NOT RECEIVE A W-2

Not including employees or employees/owners included in the previous question, how many other people worked for this business in 2022, including those paid through grants? *Include both full-time and part-time workers as well as yourself, if applicable. Include only persons in the United States.*

Count each person only once. If none, report zero.

	Number of People
a. Individuals whose work was directed by this business who received payment in other ways (e.g., contractors, consultants, temporary workers who receive a 1099 from this business or payment from another business)	_____
b. Unpaid individuals who worked for this business (e.g., friends, volunteers, family members)	_____

A.10 TOTAL WORLDWIDE AND DOMESTIC SALES AND OPERATING REVENUES

In 2022, what was the amount of this business’s worldwide and domestic sales and operating revenues, including grants?

Round to the nearest one thousand dollars. If none, report zero.

2022 sales, revenues, and grants	\$Bil. Mil. Thou. \$ _____
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Reporting Instructions: Report amount using U.S. Generally Accepted Accounting Principles (U.S. GAAP) as recognized by the Financial Accounting Standard Board (FASB). If this business follows International Financial Reporting Standards (IFRS), we request that you estimate any adjustments that would be required to conform to U.S. GAAP.

A.11 DOMESTIC SALES AND REVENUES

How much of the 'A.10 Total Worldwide and Domestic Sales and Operating Revenues' in 2022 sales, revenues, and grants was attributable to or originated from domestic operations? *Include sales and operating revenues to foreign customers, including foreign subsidiaries.*

Round to the nearest one thousand dollars. If none, report zero.

Domestic operating revenues \$Bil. | Mil. | Thou.
\$ _____

Reporting Instructions: For example, a U.S. manufacturing corporation sells parts to customers around the world; however, because all of its operations are located inside the United States, it reports all of its sales in this question.

A.12 SOURCES OF DOMESTIC SALES AND REVENUES

Approximately what share of this business's 'A.11 Domestic Sales and Revenues' in 2022 domestic sales and revenues, including grants, came from the following?

If none, report zero.

	Percent
a. Selling goods to customers, including other businesses	_____ %
b. Selling services to customers, including other businesses	_____ %
c. Licensing or royalties	_____ %
d. Grants	_____ %
e. Other (specify)	_____ %
	Total = 100%

A.13 TYPES OF CUSTOMERS

In 2022, which of the following types of customers accounted for 10% or more of this business's total sales of goods and/or services? *Select all that apply.*

- U.S. Federal government
- State and local government, including school districts, transportation authorities, etc.
- Other businesses, including distributors of your product(s)
- Other organizations (foreign governments, nonprofits, etc.)
- Individuals
- Business did not have any sales

A.14 TYPES OF WORKERS

In 2022, which of the following types of workers were used by this business? *Select all that apply.*

- Full-time paid employees (workers who received a W-2 from this business)
- Part-time paid employees (workers who received a W-2 from this business)
- Paid day laborers
- Temporary staffing obtained from a temporary help service
- Leased employees from a leasing service or a professional employer organization
- Contractors, subcontractors, independent contractors, or outside consultants (workers who received a 1099 or payment from another company)
- None of the above

A.15 FRANCHISE OPERATION

In 2022, did all or part of this business operate as a franchise?

- Yes
- No

A.16 WORKING FROM HOME

In 2022, did this business allow any employees to work from home?

- Yes
- No – Skip to 'A.18 Factors Affecting Working From Home'

A.17 PERCENT OF EMPLOYEES WORKING FROM HOME

In 2022, what percent of all employees at this business worked from home at the following frequencies?

If none, report zero. Estimates are acceptable.

	Percent
a. Never	_____ %
b. Less than one day per week	_____ %
c. One day per week	_____ %
d. Two to four days per week	_____ %
e. Five or more days per week	_____ %
	Total = 100%

A.18 FACTORS AFFECTING WORKING FROM HOME

In 2022, did any of the following factors limit the ability of this business's employees to work from home?

Select all that apply.

- Job or parts of job cannot be performed from home
- Management of employees working from home too costly or complicated
- Security (IT or other) concerns
- Other (specify)

No limiting factors

A.19 PRIMARY BUSINESS ACTIVITY

Describe this business's primary business activity during 2022.

Section B: Owner Characteristics

The following section collects information on the owners of this business. Based on the number of owners you reported, you may be asked to complete this section for up to four owners of this business. If the business had no owners, then proceed to the instructions on the bottom of page 19.

Unless otherwise indicated, the reporting period for this section is calendar year 2022.

B.1 PERCENT OWNERSHIP

For the person(s) owning the largest percentage(s) in this business in 2022, list each person's name and percentage owned.

- Do not report percentages owned by parent companies, estates, trusts, or other entities.
- If more than 4 people owned this business equally, select any 4 people.
- Round percentages to whole numbers. For example, report 1/3 ownership as 33%.

Name of Owner	Percentage Owned (Estimates are acceptable.)
Name 1:	Owner 1: _____%
Name 2:	Owner 2: _____%
Name 3:	Owner 3: _____%
Name 4:	Owner 4: _____%

If percent entered for Owner 1 is more than 0%, then answer questions for Owner 1 on pages XX, XX, and XX.

If percent entered for Owner 2 is more than 0%, then answer questions for Owner 2 on pages XX, XX, and XX.

If percent entered for Owner 3 is more than 0%, then answer questions for Owner 3 on pages XX, XX, and XX.

If percent entered for Owner 4 is more than 0%, then answer questions for Owner 4 on pages XX, XX, and XX.

B.1.1 SEX

What is the sex of Owner X?

- Male
- Female

Note: Please answer BOTH B.1.2 Ethnicity and B.1.3 Race questions.

B.1.2 ETHNICITY

Is Owner X of Hispanic, Latino, or Spanish origin?

- No**, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican American, Chicano
- Yes, Puerto Rican
- Yes, Cuban

- Yes, another Hispanic, Latino, or Spanish origin – Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.

B.1.3 RACE

What is Owner X's race? *Select all that apply. (For this survey, Hispanic origins are not races.)*

- White – Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc.
-
- Black or African Am. – Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.
-
- American Indian or Alaska Native – Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.
-
- Chinese
 - Vietnamese
 - Native Hawaiian
 - Filipino
 - Korean
 - Samoan
 - Asian Indian
 - Japanese
 - Chamorro
 - Other Asian – Print, for example, Pakistani, Cambodian, Hmong, etc.
-
- Other Pacific Islander – Print, for example, Tongan, Fijian, Marshallese, etc.

B.1.4 MILITARY SERVICE

Has Owner X ever served in any branch of the U.S. Armed Forces, including the Coast Guard, the National Guard, or a Reserve component of any service branch?

- Yes
- No – **Skip to 'B.1.7 Initial Acquisition Year'** on page XX

B.1.5 MILITARY SERVICE DISABILITY

Is Owner X disabled as the result of illness or injury incurred or aggravated during military service?

- Yes
- No

B.1.6 OTHER MILITARY SERVICE

Do any of the following characteristics describe Owner X's military service? *Select all that apply.*

- Served on active duty military service, not including training for the Reserves or National Guard
- Served on active duty military service after September 11, 2001
- Served on active duty military service in 2022
- Served in the National Guard or as a reservist of any branch of the U.S. Armed Forces in 2022

- None of the above

B.1.7 INITIAL ACQUISITION YEAR

In what year did Owner X initially acquire ownership of this business?

Year

- Don't know

B.1.8 PRIMARY INCOME SOURCE

In 2022, did this business provide Owner X's primary source of personal income?

- Yes
- No

B.1.9 PRIOR BUSINESS OWNERSHIP

Not including this business, what is the status of the previous business Owner X started most recently?

- This is the owner's first business
- Business is still operating, and Owner X still owns it
- Business is no longer in operation
- Business was purchased by another company
- Business was purchased by another individual
- Other (specify)

B.1.10 EDUCATION PRIOR TO OWNING THE BUSINESS

Prior to establishing, purchasing, or acquiring this business, what was the highest degree or level of school Owner X completed?

- Less than high school / secondary school graduate – **Skip to 'B.1.12 Age'** on page XX
- High school / secondary school graduate – Diploma or GED – **Skip to 'B.1.12 Age'** on page XX
- Technical, trade, or vocational school – **Skip to 'B.1.12 Age'** on page XX
- Some college, but no degree – **Skip to 'B.1.12 Age'** on page XX
- Associate Degree (for example, AA, AS) – **Skip to 'B.1.12 Age'** on page XX
- Bachelor's Degree (for example, BA, BS)
- Master's Degree (for example, MA, MEng, MEd, MSW, MBA)
- Doctorate Degree (for example, PhD, EdD)
- Professional Degree, beyond a Bachelor's Degree (for example, MD, DDS, DVM, LLB, JD)

B.1.11 FIELD OF HIGHEST DEGREE PRIOR TO OWNING THE BUSINESS

Prior to establishing, purchasing, or acquiring this business, what was the field of the highest degree completed for Owner X? *Select all that apply.*

- Biological/ agricultural sciences and natural resources
- Chemistry, except biochemistry
- Computer sciences and mathematics
- Engineering
- Geosciences, atmospheric and ocean sciences
- Health sciences

- Physics and astronomy
 - Psychology and social sciences
 - Science and mathematics teacher education
 - Other science and engineering related fields, not listed above (specify)
-
- Arts and humanities fields
 - Business management and administration fields
 - Education, except science and mathematics teacher education
 - Law and legal studies
 - Public administration and social service and related fields
 - Sales and marketing fields
 - Other non-science and non-engineering related fields, not listed above (specify)

B.1.12 AGE

What was the age of Owner X as of December 31, 2022?

- Under 25
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 or over

B.1.13 PLACE OF BIRTH

Was Owner X born in the United States?

- Yes
- No

B.1.14 U.S. CITIZENSHIP

Is Owner X a citizen of the United States?

- Yes
- No

B.1.15 OWNER DISABILITY

Does Owner X have a physical or mental impairment that substantially limits one or more of his/her major life activities? *For this survey, major life activities can include both those in everyday and professional life.*

- Yes
- No
- Don't know

B.1.16 REASONS FOR OWNING THE BUSINESS

How important to Owner X is each of the following reasons for owning this business? *Select one for each row.*

	Very Important	Somewhat Important	Not Important
Wanted to be my own boss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Flexible hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Balance work and family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunity for greater income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Best avenue for my ideas / goods / services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unable to find employment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working for someone else didn't appeal to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Always wanted to start my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
An entrepreneurial friend or family member was a role model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wanted to carry on the family business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wanted to help and/or become more involved in my community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B.5 ONE FAMILY MAJORITY OWNERSHIP

In 2022, did two or more members of one family own the majority of this business? (*Family refers to spouses / unmarried partners, parents / guardians, children, siblings, or close relatives.*)

- Yes
- No

B.6 JOINT OWNERSHIP

In 2022, did spouses / unmarried partners jointly own this business?

- Yes
- No – **See instructions at the bottom of this page**

B.7 EQUAL OPERATION

In 2022, was this business operated equally by both spouses / unmarried partners?

- Yes, equally operated by spouses / unmarried partners
- No, primarily operated by Owner 1
- No, primarily operated by Owner 2

If you reported "No" to 'A.4 Business Ownership – U.S. Entity' AND you reported between 1-9 total employment to 'A.8 Number of W-2 Paid Domestic Employees or Employees/Owners,' skip to **SECTION D: RESEARCH AND DEVELOPMENT FOR MICROBUSINESSES** on page XX.

All others skip to 'SECTION E: GOODS, SERVICES, AND BUSINESS PROCESSES' on page XX.

Section C: Research Activities at Nonprofit Organizations

The following section collects information on your organization and asks about research performed and/or funded by your organization. For the purposes of this survey, your organization is defined as all units included in your Internal Revenue Service (IRS) Form 990 or IRS Form 990-PF filings. Only organizations headquartered in the United States are eligible for this section. The reporting period for this section is your organization's fiscal year ending in 2022. *Estimates are acceptable. Report all items to the best of your ability.*

C.1 ORGANIZATION AFFILIATION

Is your organization affiliated with or considered part of another for-profit, nonprofit, or higher education organization? For example, a specific hospital foundation, university research entity, etc.

Yes

If "Yes", specify

No

C.2 TOTAL EXPENSES

What was the consolidated total amount of your organization's expenses for 2022 as (would be) reported on your IRS Form 990s, line 18, or IRS Form 990-PFs, line 26 total expenses and disbursements for column (a) revenue and expenses per books?

\$Bil. | Mil. | Thou.

Round to the nearest one thousand dollars. If none, report zero.

\$ _____

C.3 NUMBER OF EMPLOYEES

For the pay period including March 12, 2022, how many people worked for your organization?

Include:

- Full- and part-time employees

Exclude:

- Temporary employees and consultants

Number

C.4 FISCAL YEAR END

In what month did your organization's Fiscal Year (FY) 2022 end?

MM | YYYY

___ 2022

The next questions ask about research performed and/or funded by your organization. Please read the information below before continuing.

By research we mean...

For the purposes of this survey, research includes **research and experimental development**.

Research and experimental development comprise creative and systematic work to:

- Increase the stock of knowledge, including knowledge of humankind, culture, and society OR
- Devise new applications of available knowledge, including materials, products, devices, processes, systems, or services

Research activities must be...

- **Novel:** projects that advance current knowledge or create new knowledge
- **Creative:** projects focused on original concepts and hypotheses
- **Uncertain:** project outcomes are unable to be completely determined at the outset
- **Systematic:** projects are planned and budgeted
- **Transferable/Reproducible:** project methodology and results are transferable/reproducible to other situations and locations

May meet the criteria for research

- Laboratory or animal studies
- Clinical trials
- Prototype development
- Outcomes research
- Development/measurement of new methods to deliver/measure social service outcomes
- Policy research
- Humanities research

- Research traineeships

- Other experimental studies

Most likely do not meet the criteria for research

- Internal program monitoring or evaluation
- Public service grants or outreach programs
- Education or training programs
- Quality control testing
- Market research

- Management studies/efficiency surveys
- Literary, artistic, or historical projects, such as films, music, or books and other publications
- Feasibility studies, unless included as part of an overall research project

C.5 RESEARCH PERFORMED BY YOUR ORGANIZATION

Did your organization perform research in FY 2022?

Include:

- Research performed by your organization’s employees or contract employees. (Contract employees are individuals contracted to work on projects otherwise fully performed by your organization’s staff.)

Exclude:

- Research performed outside your organization by subcontractors or subawardees. (Report in ‘**C.6 Research Performed by Others**’ on page XX.)

- Yes
- No

If you would like to add additional detail or clarification to your response, please comment in the space provided below.

C.6 RESEARCH PERFORMED BY OTHERS

Did your organization fund research performed by others outside your organization in FY 2022?

Include:

- All grants, contracts, subcontracts, and subawards awarded by your organization to external recipients to perform research

Exclude:

- Research performed by your organization's employees
- Research performed by contract employees (Contract employees are individuals contracted to work on projects otherwise fully performed by your organization's staff.)

- Yes
- No

If you would like to add additional detail or clarification to your response, please comment in the space provided below.

If you reported "No" for 'C.5 Research Performed by Your Organization' AND "No" for 'C.6 Research Performed by Others,' skip to "'Contact Information Section' on page XX.

If you reported "No" for 'C.5 Research Performed by Your Organization' AND "Yes" for 'C.6 Research Performed by Others,' skip to 'C.17 Funding for Research Performed by Other Organizations' on page XX.

All others continue to 'C.7 Funding for Research Performed by This Organization.'

C.7 FUNDING FOR RESEARCH PERFORMED BY THIS ORGANIZATION

In FY 2022, how much was spent on research performed within your organization? *Round to the nearest one thousand dollars. If none, report zero.*

Include:

- Direct costs, such as salaries and wages, travel, equipment, supplies, consulting, and other expenditures directly supporting your organization's research projects
- Indirect costs associated with research expenditures, such as general and administrative salaries and wages, fringe benefits, facility costs, depreciation, etc. These should be calculated using your organization's applicable fringe, overhead, and General and Administrative (G&A) or Facilities and Administrative (F&A) rates

Exclude:

- Capital expenditures (i.e., costs for construction or renovation of facilities). Report Capital expenditures in ‘C.18 -C.20’ on pages XX.
- Payments/funds in excess of the actual cost of the research work performed (e.g., fees)
- Payments made by your organization to subcontractors or subawardees performing research outside your organization

Total \$Bil. | Mil. | Thou.
\$ _____

If you would like to add additional detail or clarification to your response, please comment in the space provided below.

If ‘C.7 Funding for Research Performed by This Organization’ are less than \$50,000, then skip to ‘Contact Information Section’ on page XX.

C.8 RESEARCH FUNDING SOURCES

How much of the ‘C.7 Funding for Research Performed by This Organization’ in funding for research performed by this organization came from each of the following sources? *Round to the nearest one thousand dollars. If none, report zero.*

	(1) Domestic Sources \$Bil. Mil. Thou.	(2) Foreign Sources \$Bil. Mil. Thou.	(3) Total \$Bil. Mil. Thou.
a. Internal funds: Your organization’s own funds from your endowment, general donations, or other unrestricted sources. <i>Report only domestic sources for this item.</i>	\$ _____	Gray out	\$ _____
b. Federal government: Any agency of the United States government. Include funds your organization received as a subcontractor or subawardee for research activities on federal projects. <i>Report only domestic sources for this item.</i>	\$ _____	Gray out	\$ _____
c. State and local government: Any state, county, municipality, or other local government entity in the United States. <i>Report only domestic sources for this item.</i>	\$ _____	Gray out	\$ _____
d. Individual donors: Gifts designated by the donors for research	\$ _____	\$ _____	\$ _____
e. Businesses: Domestic and foreign for-profit organizations. Report funds from a company’s nonprofit foundation in Row g	\$ _____	\$ _____	\$ _____
f. Universities: Domestic and foreign degree-granting institutions	\$ _____	\$ _____	\$ _____

g. Foundations and all other nonprofits: Domestic and foreign public charities and other nonprofit organizations not reported in Row f	\$ _____	\$ _____	\$ _____
h. Other, specify: All other sources not reported above _____	\$ _____	\$ _____	\$ _____
Total	\$ _____	\$ _____	\$ _____

C.9 RESEARCH PERFORMANCE BY FIELD

How much of the ‘**C.7 Funding for Research Performed by This Organization**’ in funding for research performed by this organization was spent in each of the following fields? *Round to the nearest one thousand dollars. If none, report zero.*

\$Bil. | Mil. | Thou.

- a. Agricultural Sciences and Natural Resources and Conservation:** e.g., Agricultural sciences, Animal sciences, Applied horticulture, Fishing and fisheries science, Food science and technology, Forestry, Natural resources and conservation, Plant sciences, or Soil sciences

\$ _____
- b. Biological, Biomedical, and Health Sciences:** e.g., Biochemistry, biophysics, molecular biology; Biotechnology; Botany; Cell biology; Epidemiology; Genetics; Medicine; Neuroscience; Public health; Veterinary medicine; or Zoology

\$ _____
- c. Engineering:** e.g., Aerospace, aeronautical, and astronautical engineering; Bioengineering and biomedical engineering; Chemical engineering; Civil engineering; Electrical, electronic, and communications engineering; Industrial and manufacturing engineering; Mechanical engineering; or Metallurgical and materials engineering

\$ _____
- d. Geosciences, Atmospheric Sciences, and Ocean Sciences:** e.g., Atmospheric sciences and meteorology, Geological and earth sciences, or Ocean and marine sciences

\$ _____
- e. Mathematics, Statistics, and Computer and Information Sciences:** e.g., Computer sciences, Information sciences, Information technology, Mathematics, or Statistics

\$ _____
- f. Physical Sciences:** e.g., Astronomy and astrophysics, Chemistry, Materials science, or Physics

\$ _____
- g. Psychology and Social Sciences:** e.g., Anthropology; Archaeology; City, urban, community, and regional planning; Criminology; Economics; Geography; Linguistics; Political

\$ _____

science and government; Psychology; Public policy analysis; or Sociology, demography, and population studies

h. **Humanities:** e.g., English language and literature, letters; Foreign languages and literature; History; or Philosophy and religious studies

\$ _____

i. **Other Fields:** e.g., Business management and business administration, Communication and communications technologies, Education, Law, Library science, Social work, or Visual and performing arts

\$ _____

Total

\$ _____

C.10 CLINICAL TRIAL RESEARCH

What percentage of the amount reported in ‘C.7 Funding for Research Performed by This Organization’ in funding for research performed by this organization was for medical clinical trials phases I-III? *Report percentages in whole numbers. If none, report zero.*

Percent _____%

C.11 RESEARCH PERFORMANCE BY TYPE OF RESEARCH

How much of the ‘C.7 Funding for Research Performed by This Organization’ in funding for research performed by this organization was for basic research, applied research, and experimental development? *Round to the nearest one thousand dollars. If none, report zero.*

	(1) Federal	(2) Nonfederal	(3) Total
	\$Bil. Mil.	\$Bil. Mil. Thou.	\$Bil. Mil.
	Thou.		Thou.

a. Basic research: Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

\$ _____ \$ _____ \$ _____

b. Applied research: Original investigation undertaken in order to acquire new knowledge. It is directed primarily towards a specific, practical aim or objective.

\$ _____ \$ _____ \$ _____

c. Experimental development: Systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.

\$ _____ \$ _____ \$ _____

Total: Total for column (1) should equal the amount entered for ‘**C.8.a. Research Funding Sources –Federal Government.**’

Total for column (3) should equal the amount entered for ‘**C.7 Funding for Research Performed by This Organization.**’ \$ _____ \$ _____ \$ _____

If you would like to add additional detail or clarification to your response, please comment in the space provided below.

Examples		
Basic Research	Applied Research	Experimental development
A researcher is studying the properties of human blood to determine what affects coagulation.	A researcher is conducting research on how a new chicken pox vaccine affects blood coagulation.	A researcher is conducting clinical trials to test a newly developed chicken pox vaccine for young children.
A researcher is studying the properties of molecules under various heat and cold conditions.	A researcher is investigating the properties of particular substances under various heat and cold conditions with the objective of finding longer lasting components for highway pavement.	A researcher is working with state transportation officials to conduct tests of a newly developed highway pavement under various types of heat and cold conditions.
A researcher is investigating the effect of different types of manipulatives on the way first graders learn mathematical strategy by changing manipulatives and then measuring what students have learned through standardized instruments.	A researcher is studying the implementation of a specific math curriculum to determine what teachers need to know to implement the curriculum successfully.	A researcher is developing and testing software and support tools, based on field work, to improve mathematics cognition for student special education.

C.12 RESEARCH PERFORMANCE BY TYPE OF COST

How much of the ‘**C.7 Funding for Research Performed by This Organization**’ spent on research performed within your organization was for each of the following types of costs?

\$Bil. | Mil. | Thou.

a. Salaries, wages, and fringe benefits of your organization’s employees

- Include costs for all compensation and benefits of employees that are included in the total reported on **C.7.**

- Include payroll taxes such as Social Security and Medicare.

b. Costs associated with contract employees working on your organization’s research

c. Depreciation and amortization on property, plant, equipment, and intangible assets

- Include depreciation on tangible research assets, such as buildings or equipment, as well as the amortization of intangible assets such as patents.

d. Expensed machinery and equipment

- Include all equipment purchases for research that are beneath your organization’s capitalization threshold.

e. Materials and supplies

- Include costs for materials and supplies consumed for research

f. All other costs

- Include administrative and overhead costs clearly associated with your organization’s research.

Total

C.13 RESEARCH EMPLOYEES FOR NONPROFIT ORGANIZATIONS

Of the ‘C.3 Number of Employees’ employees reported, how many worked on research activities in FY 2022?

Include:

- Only your organization’s paid employees.

Exclude:

- Contract employees. (Report in ‘C.15 Research Contract Employees for Nonprofit Organizations.’)
Number

a. Researchers (including scientists, engineers, and their managers): Professionals engaged in the conception or creation of new knowledge

b. Research technicians: Staff who work under the supervision of researchers to conduct research activities

c. **Other support personnel (clerical and other):** Staff who provide direct support services for the research project

Total

C.14 RESEARCH FULL-TIME EQUIVALENTS FOR NONPROFIT ORGANIZATIONS

How many full-time equivalents (FTEs) worked on research activities in FY 2022?

FTE research personnel are calculated as the total working (paid) hours spent working on research during a specific reference period (usually a calendar year) divided by the number of hours representing a full-time schedule within the same period. Include only your organization’s paid employees. For example, if you have three people working 20, 30, and 40 hours in a week on research activities and a full-time schedule is 40 hours a week at your organization, your research FTE calculation is $(20 + 30 + 40)/40 = 2.25$ FTE.

	Number of FTEs
a. Researchers (including scientists, engineers, and their managers): Professionals engaged in the conception or creation of new knowledge	____.____
b. Research technicians: Staff who work under the supervision of researchers to conduct research activities	____.____
c. Other support personnel (clerical and other): Staff who provide direct support services for the research project	____.____
Total	____.____

C.15 RESEARCH CONTRACT EMPLOYEES FOR NONPROFIT ORGANIZATIONS

a. Did any contract employees work on your research activities in FY 2022?

Contract employees are individuals contracted to work on projects otherwise fully performed by your organization staff.

- Yes
- No

b. If "Yes," how many contract employees worked on your research activities during FY 2022?

C.16 RESEARCH VOLUNTEERS FOR NONPROFIT ORGANIZATIONS

a. Did any volunteers work on your research activities in FY 2022?

Volunteers are unpaid workers contributing appreciable and essential activity to research performed by your organization. Their research skills should be comparable to those of your

employees. Individuals funded by other sources to conduct research at your organization should not be considered volunteers.

- Yes
- No

b. If "Yes," how many volunteers worked on your research activities during FY 2022?

If you reported "No" for 'C.6 Research Performed by Others,' skip to 'C.18 Total Capital Expenditures for Your Organization' on page XX.

C.17 FUNDING FOR RESEARCH PERFORMED BY OTHER ORGANIZATIONS

In FY 2022, how much funding did your organization provide to others to perform research activities?

Include:

- All grants, contracts, subcontracts, and subawards awarded by your organization to external recipients to perform research.
- For multi-year awards, include only the amount paid to the external recipients in FY 2022.

Exclude:

- Research performed by contract employees.

	\$Bil. Mil. Thou.
a. Research grants or contracts: Include grants and contracts awarded by your organization to external recipients to perform independent research	\$ _____
b. Subcontracts and subawards: Include subcontracts and subawards awarded by your organization to external recipients to support your own research activities.	\$ _____
Total	\$ _____

If you would like to add additional detail or clarification to your response, please comment in the space provided below.

C.18 TOTAL CAPITAL EXPENDITURES FOR YOUR ORGANIZATION

What was the amount of your organization's capital expenditures in 2022?

	\$Bil. Mil. Thou.
Total	\$ _____

C.19 TOTAL CAPITAL EXPENDITURES FOR RESEARCH OPERATIONS

How much of the 'C.18 TOTAL CAPITAL EXPENDITURES FOR YOUR ORGANIZATION' in capital expenditures was for research operations?

- Organizations should allocate capital expenditures that benefit both research and other operations on a reasonable basis.
- None of the costs reported here should be included in ‘C.7 Funding for Research Performed by This Organization’.

Total \$Bil. | Mil. | Thou.
\$ _____

C.20 CAPITAL EXPENDITURES FOR RESEARCH OPERATIONS BY TYPE OF COST

How much of the ‘C.19 TOTAL CAPITAL EXPENDITURES FOR RESEARCH OPERATIONS’ in capital expenditures for research operations was for the following?

	\$Bil. Mil. Thou.
a. Land acquisition	\$ _____
b. Buildings and land improvement	\$ _____
c. Equipment	\$ _____
d. Capitalized software	\$ _____
e. All other capital expenditures for research operations	\$ _____
Total	\$ _____

Section D: Research and Development for Microbusinesses

The following section collects information on research and development activity from businesses with W-2 employment between 1 and 9.

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.

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

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 this business, including all subsidiaries and divisions. Include subsidiary companies where there is more than 50 percent ownership.

Reporting period

Report data for the calendar year 2022, if possible, or for this business's fiscal year ending between April 2022 and March 2023.

Estimates are acceptable.

Report all items to the best of your ability.

D.1 R&D ACTIVITIES

During 2022, did this business do any of the following R&D activities? Include activities that:

- This business performed
- Others paid this business to do
- This business paid others to do

Select one for each row.

	Yes	No
a. Conducted activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses	<input type="checkbox"/>	<input type="checkbox"/>
b. Conducted activities aimed at acquiring new knowledge for solving a specific problem or meeting a specific commercial objective	<input type="checkbox"/>	<input type="checkbox"/>
c. Conducted 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	<input type="checkbox"/>	<input type="checkbox"/>
d. Developed and tested goods, services, or processes that were derived from scientific research or technical findings	<input type="checkbox"/>	<input type="checkbox"/>
e. Developed software that advanced scientific or technological knowledge	<input type="checkbox"/>	<input type="checkbox"/>
f. Produced findings that could be published in academic journals or presented at scientific conferences	<input type="checkbox"/>	<input type="checkbox"/>
g. Applied scientific or technical knowledge in a way that has never been done before	<input type="checkbox"/>	<input type="checkbox"/>
h. Created new scientific or technical solutions that can be generalized to other situations	<input type="checkbox"/>	<input type="checkbox"/>
i. Conducted work to discover previously unknown technological facts, structures, or relationships	<input type="checkbox"/>	<input type="checkbox"/>
j. Conducted work to extend the understanding of scientific facts, relationships, or principles in ways that could be useful to others	<input type="checkbox"/>	<input type="checkbox"/>

If “No” is selected for a. – j., skip to ‘D. 17 FEDERAL TAX CREDIT FOR RESEARCH ACTIVITIES’ on page XX.

D.2 R&D COSTS

What was the total cost (both direct and indirect) in 2022 for all the R&D activities reported as “Yes” in the ‘D.1 R&D Activities’ question? *Your best estimate is acceptable. Report dollar amount in thousands. If none, report zero.*

Include:

- Salaries, wages, and fringe benefits
- Plant, machinery, and equipment, except that which was capitalized because it had an alternative future use
- Materials, supplies, software
- Rent and utilities
- Consultants and contractors
- Depreciation expense from plant, machinery, and equipment that was capitalized because it had an alternative future use

Exclude:

- 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
- Capital expenditures (i.e., costs for construction or renovation of facilities). Report capital expenditures in '**D.10 TOTAL CAPITAL EXPENDITURES FOR YOUR ORGANIZATION,**' '**D.11 TOTAL CAPITAL EXPENDITURES FOR R&D OPERATIONS,**' and '**D.12 CAPITAL EXPENDITURES FOR R&D OPERATIONS BY TYPE OF COST**' on page XX.
- Payments/funds in excess of the actual cost of the research work performed (e.g., profits or fees)

Total costs for '**R&D Activities**' reported in the '**D.1 R&D Activities**' question for 2022 \$Mil. | Thou.
\$ _____

If '**D.2 R&D Costs**' are less than \$50,000, skip to '**D. 17 FEDERAL TAX CREDIT FOR RESEARCH ACTIVITIES**' on page XX.

D.3 FOREIGN R&D COSTS

During 2022, what amount, if any, of the '**D.2 R&D Costs**' was performed outside the U.S. by this business or others? *Round to the nearest thousand dollars.* \$Mil. | Thou.
\$ _____

D.4 DOMESTIC R&D COSTS

Calculate this business's domestic R&D costs by subtracting the amount entered for R&D costs outside the U.S. (question '**D.3 Foreign R&D Costs**') from all R&D costs (question '**D.2 R&D Costs**'). This value will be used in other questions in this survey. *Round to the nearest thousand dollars.*

This business's domestic R&D cost in 2022 \$Mil. | Thou.
\$ _____

If 'D.4 Domestic R&D Costs' equals \$0, skip to 'D. 17 FEDERAL TAX CREDIT FOR RESEARCH ACTIVITIES' on page XX.

D.5 TYPES OF R&D COSTS

During 2022, how much of the 'D.4 Domestic R&D Costs' in domestic R&D costs was for each of the following types of costs? *Round to the nearest thousand dollars.*

	\$Mil. Thou. Dol.
a. Salaries, wages, and fringe benefits	\$ _____
b. Expensed machinery and equipment (not capitalized)	\$ _____
c. Materials and supplies	\$ _____
d. Payments to others for R&D, including purchased R&D services	\$ _____
e. Depreciation on R&D property and equipment	\$ _____
f. All other costs (e.g., consultants, contractors, travel, rent, general administrative costs, clearly associated with your company's R&D)	\$ _____
Total = 'D.4 Domestic R&D Costs'	\$ _____

D.6 DOMESTIC R&D PERFORMANCE COSTS

Calculate this business's domestic R&D performance costs by subtracting the payments for R&D services (item d. in question 'D.5 Types of R&D Costs') from domestic R&D costs (question 'D.4 Domestic R&D Costs'). Use this value in the next question. *Round to the nearest thousand dollars.*

	\$Mil. Thou. Dol.
This business's domestic R&D performance costs in 2022	\$ _____

If 'D.6 Domestic R&D Performance Costs' equals \$0, skip to 'D. 17 FEDERAL TAX CREDIT FOR RESEARCH ACTIVITIES' on page XX.

D.7 FUNDING SOURCES FOR R&D ACTIVITIES

During 2022, of the 'D.6 Domestic R&D Performance Costs' in total domestic R&D performance cost, how much was paid for by the following sources? *Round to the nearest thousand dollars.*

	\$Mil. Thou. Dol.
a. This U.S. business	\$ _____

- b. Your foreign owner (if this business is foreign-owned) \$ _____
- c. Other businesses located within the United States \$ _____
- d. Other businesses located outside the United States \$ _____
- e. Universities or colleges located within the United States. \$ _____
- f. Nonprofit organizations located within the United States \$ _____
- g. U.S. Federal government (including R&D grants) \$ _____

Which agency provided the largest share? *Select one from the list below.*

Department of Defense

- National Science Foundation
- Department of Health and Human Services, including the National Institutes of Health
- Department of Energy
- NASA
- Other agencies
-

h. U.S., State, or local government (not including state universities) \$ _____

- i. All other organizations outside the United States \$ _____
- Total = 'D.6 Domestic R&D Performance Costs' \$ _____

D.8 R&D CATEGORIES

During 2022, of the 'D.6 Domestic R&D Performance Costs' in domestic R&D performance cost, how much was for the following with types of R&D? *Round to the nearest thousand dollars.*

\$Mil. | Thou. | Dol.

a. **Basic research** – activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses \$ _____

b. **Applied research** – activities aimed at solving a specific problem or meeting a specific commercial objective \$ _____

c. **Development** – 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

Total = 'D.6 Domestic R&D Performance Costs' \$ _____
\$ _____

If 'D.7.h. Domestic R&D Performance Costs funded by the U.S. Federal Government' equals \$0 (or missing), skip to 'D.10 Total Capital Expenditures for This Business' on page XX.

All others continue to 'D.9 R&D Categories Funded by the U.S. Federal Government'

D.9 R&D CATEGORIES FUNDED BY THE U.S. FEDERAL GOVERNMENT

During 2022, of the 'D.7.h. Domestic R&D Performance Costs funded by the U.S. Federal Government' in domestic R&D performance cost **funded by the U.S. federal government**, how much was for the following types of R&D? *Round to the nearest thousand dollars.*

\$Mil. | Thou. | Dol.

a. **Basic research** – activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses

\$ _____

b. **Applied research** – activities aimed at solving a specific problem or meeting a specific commercial objective

\$ _____

c. **Development** – 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

\$ _____

Total = 'D.7.h. Domestic R&D Performance Costs funded by the U.S. Federal Government'

\$ _____

D.10 TOTAL CAPITAL EXPENDITURES FOR THIS BUSINESS

What was the amount of this business's capital expenditures in 2022?

\$Mil. | Thou. | Dol..

Total \$ _____

If 'D.10 Total Capital Expenditures for this Business' equals \$0, skip to 'D.13 Domestic R&D Employees' on page XX.

D.11 TOTAL CAPITAL EXPENDITURES FOR R&D OPERATIONS

How much of the 'D.10 TOTAL CAPITAL EXPENDITURES FOR THIS BUSINESS' in capital expenditures was for R&D operations?

- Businesses should allocate capital expenditures that benefit both R&D and other operations on a reasonable basis.
- None of the costs reported here should be included in 'D.7 Funding Sources for R&D Activities'.

Total \$Mil. | Thou. | Dol.
\$ _____

If 'D.11 Total Capital Expenditures for R&D Operations' equals \$0, skip to 'D.13 Domestic R&D Employees' on page XX.

D.12 CAPITAL EXPENDITURES FOR R&D OPERATIONS BY TYPE OF COST

How much of the 'D.11 TOTAL CAPITAL EXPENDITURES FOR R&D OPERATIONS ' in capital expenditures for R&D operations was for the following?

	\$Mil. Thou. Dol..
a. Land acquisition	\$ _____
b. Buildings and land improvement	\$ _____
c. Machinery and equipment	\$ _____
d. Capitalized software	
e. Other intellectual property	\$ _____
f. All other capital expenditures for R&D operations	\$ _____
Total	\$ _____

D.13 DOMESTIC R&D EMPLOYEES

For the pay period including March 12, 2022, how many employees from this business's domestic operations were **R&D employees** and how many were **all other employees**? Include owners who received a W-2. *If none, report zero.*

R&D employees include all employees who work on R&D or who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups. **Exclude** employees who provide only indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers.

Previously you reported this business's total number of employees in 'A.8 Number of W-2 Paid Employees or Employee/Owners' on page XX. Responses below should not exceed the number of employees reported in A.8.

Employees

a. How many of those employees and employees/owners were R&D employees?

b. Of the R&D employees, how many were female?

c. Of the R&D employees, how many were male?

The sum of b. and c. should equal the amount entered in a.

If you reported "0" for item a. in question 'D.13 Domestic R&D Employees,' skip to 'D.17 Federal Tax Credit for Research Activities'.

D.14 DOMESTIC R&D EMPLOYEES' OCCUPATIONS

Of the 'D.13.a. R&D Employees,' how many were?

If none, report zero.

a. Researchers (including R&D scientists, engineers, and their managers)

b. R&D technicians and equivalent staff

c. R&D support staff (clerical and other)

d. Total R&D employees (Total from 'D.13.a. Domestic R&D Employees')

e. Of the researchers reported in line D.14.a., how many had PhDs?

Employees

D.15 DOMESTIC R&D EMPLOYEES FULL-TIME EQUIVALENT

What was the full-time equivalent of the 'D.14.a. Domestic R&D Employees,' R&D employees? *For full-time Domestic R&D employees, use the number of employees for the FTEs. For other full-time employees not working solely on R&D or part-time employees working on R&D, use the share of full-time workweek they work on R&D. Report partial FTEs in decimals. For example, report 1/2 FTE as .5.*

Total FTEs

Number of FTEs

____.____

D.16 DOMESTIC RESEARCHERS FULL-TIME EQUIVALENT

What was the full-time equivalent of the 'D.14.a. Domestic R&D Employee Occupations' researchers? *Report partial FTEs in decimals. For example, report 1/2 FTE as .5.*

Number of FTEs

Total FTEs

____.____

D.17 FEDERAL TAX CREDIT FOR RESEARCH ACTIVITIES

Did this business file for the federal tax credit for increasing research activities (IRS Form 6765) in 2022?

- Yes
- No

D.18 STATE TAX CREDIT FOR RESEARCH ACTIVITIES

a. Did this business file for a state tax credit for increasing research activities in 2022?

- Yes
- No

b. If yes, what state(s)? *Select all that apply.*

- | | |
|---|---|
| <input type="checkbox"/> Alabama | <input type="checkbox"/> South Carolina |
| <input type="checkbox"/> Alaska | <input type="checkbox"/> South Dakota |
| <input type="checkbox"/> Arizona | <input type="checkbox"/> Tennessee |
| <input type="checkbox"/> Arkansas | <input type="checkbox"/> Texas |
| <input type="checkbox"/> California | <input type="checkbox"/> Utah |
| <input type="checkbox"/> Colorado | <input type="checkbox"/> Vermont |
| <input type="checkbox"/> Connecticut | <input type="checkbox"/> Virginia |
| <input type="checkbox"/> Delaware | <input type="checkbox"/> Washington |
| <input type="checkbox"/> District of Columbia | <input type="checkbox"/> West Virginia |
| <input type="checkbox"/> Florida | <input type="checkbox"/> Wisconsin |
| <input type="checkbox"/> Georgia | <input type="checkbox"/> Wyoming |
| <input type="checkbox"/> Hawaii | |
| <input type="checkbox"/> Idaho | |
| <input type="checkbox"/> Illinois | |
| <input type="checkbox"/> Indiana | |
| <input type="checkbox"/> Iowa | |
| <input type="checkbox"/> Kansas | |
| <input type="checkbox"/> Kentucky | |
| <input type="checkbox"/> Louisiana | |
| <input type="checkbox"/> Maine | |
| <input type="checkbox"/> Maryland | |
| <input type="checkbox"/> Massachusetts | |
| <input type="checkbox"/> Michigan | |
| <input type="checkbox"/> Minnesota | |
| <input type="checkbox"/> Mississippi | |
| <input type="checkbox"/> Missouri | |
| <input type="checkbox"/> Montana | |
| <input type="checkbox"/> Nebraska | |
| <input type="checkbox"/> Nevada | |
| <input type="checkbox"/> New Hampshire | |
| <input type="checkbox"/> New Jersey | |
| <input type="checkbox"/> New Mexico | |
| <input type="checkbox"/> New York | |
| <input type="checkbox"/> North Carolina | |
| <input type="checkbox"/> North Dakota | |
| <input type="checkbox"/> Ohio | |
| <input type="checkbox"/> Oklahoma | |
| <input type="checkbox"/> Oregon | |
| <input type="checkbox"/> Pennsylvania | |
| <input type="checkbox"/> Rhode Island | |

Section E: Goods, Services, and Business Processes

The following section collects information on this business's introduction of new or improved goods, services, or business processes that differed significantly from the business's previous goods, services, or business processes.

The goods, services, or business processes must have characteristics or intended uses that are new or improved, and which differ significantly from what was previously used or sold by this business. However, they can fail or take time to prove themselves.

The goods, services, or business processes need only be new or improved for this business. They could have been originally developed or used by other businesses or organizations.

This section also collects information on this business's response to or anticipation of climate related demands.

Unless otherwise indicated in the question, this section asks about the three years 2020 to 2022 time period, instead of one year as in other sections of this survey.

E.1 NEW OR IMPROVED GOODS

During the three years 2020 to 2022, did this business introduce to the market any new or improved goods that differed significantly from this business's previous goods?

This includes the addition of new functions or improvements to existing functions or user utility.

- Functions include the following: quality, technical specifications, reliability, durability, economic efficiency during use, affordability, convenience, usability, and user friendliness.
- User utility includes attributes such as affordability and financial convenience.

Goods: usually a tangible object such as a smartphone, furniture, or packaged software, but also includes digital goods such as downloadable software, music and film. (Exclude the simple resale of new goods or changes of a solely aesthetic nature.)

- Yes, this business introduced a new or improved good that was **new to the market**, which was not previously offered by any of your competitors (it may have already been available in other markets)
- Yes, this business introduced a new or improved good that was **new only to this business**, which was identical or very similar to products already offered by your competitors
- No

E.2 NEW OR IMPROVED SERVICES

During the three years 2020 to 2022, did this business introduce to the market any new or improved services that differed significantly from this business's previous services?

This includes the addition of new functions or improvements to existing functions or user utility.

- Functions include quality, technical specifications, reliability, durability, economic efficiency during use, affordability, convenience, usability, and user friendliness.
- User utility includes attributes such as affordability and financial convenience.

Services: intangible activities, such as retailing, insurance, educational courses, air travel, consulting, etc., also includes digital services. (Exclude the simple resale of new services.)

- Yes, this business introduced a new or improved service that was **new to the market**, which was not previously offered by any of your competitors (it may have already been available in other markets)
- Yes, this business introduced a new or improved service that was **new only to this business**, which was identical or very similar to services already offered by your competitors
- No

If "No" is selected for 'E.1 New or Improved Goods' and "No" is selected for 'E.2 New or Improved Services,' skip to 'E.9 New or Improved Business Processes'.

E.3 INNOVATION AND ENVIRONMENTAL BENEFITS DURING USE OF GOODS OR SERVICES

During the three years 2020 to 2022, did this business introduce innovations with any of the following environmental benefits obtained during the consumption or use of a good or service by the end user? If yes, was the extent of that contribution a great deal or not?

	Yes, a <u>great</u> extent	Yes, but <u>not a great</u> extent	No
a. Reduced energy use or CO2 'footprint'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Reduced air, water, soil or noise pollution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Facilitated recycling of product after use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Extended product life through longer-lasting, more durable, or easier-to-repair products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E.4 NEW OR IMPROVED GOODS OR SERVICES AS PERCENT OF TOTAL SALES

In 2022, what percentage of this business's 'A.11 Domestic Sales and Revenues' in domestic sales and revenues were attributable to or originated from domestic operations in the following categories?

Details must sum to 100% of total dollar amount reported in 'A.11 Domestic Sales and Revenues'. Estimates are acceptable.

a. New or improved goods or services introduced during 2020 to 2022 that were new to your market .	_____%
b. New or improved goods or services introduced during 2020 to 2022 that were new only to this business .	_____%
c. Goods or services that were unchanged or only marginally modified during 2020 to 2022 (include the resale of new goods or services purchased from other companies).	_____%
Total sales in 2022 =	100%

E.5 EXPECTATIONS

Did the new or improved goods or services introduced during 2020 to 2022 meet this business's expectations, such as market share, sales or profits as of December 2022?

- Yes, expectations were exceeded
- Yes, expectations were met
- No, expectations were not met
- Too early to tell

E.6 SOURCES OF NEW OR IMPROVED GOODS OR SERVICES

Who developed these new or improved goods or services? **Select all that apply.**

- This business by itself
- This business together with other businesses, universities, research institutes, nonprofits, or other organizations
- This business by adapting or modifying goods or services originally developed by other businesses or organizations
- Other businesses or organizations

E.7 MOST IMPORTANT INNOVATION

Thinking about the most important good or service this business introduced during 2020 to 2022, was that good or service new to the market or new only to this business?

- New to the market** - This business introduced a new or improved good or service that was not previously offered by any of your competitors (it may have already been available in other markets)
- New only to this business** - This business introduced a new or improved good or service that was identical or very similar to goods or services already offered by your competitors

If you reported \$0 for ‘A.11 – Domestic Sales and Revenues’, skip to ‘E.9 – New or Improved Business Processes’.

E.8 MOST IMPORTANT INNOVATION AND SALES

In 2022, what percentage of this business’s ‘A.11 Domestic Sales and Revenues’ in domestic sales and revenues were attributed to this business’s most important innovation? **Estimates are acceptable.**

_____ %

E.9 NEW OR IMPROVED BUSINESS PROCESSES

During the three years 2020 to 2022, did this business introduce any of the following types of new or improved business processes that differed significantly (e.g. greater efficacy, resource efficiency, reliability and resilience, affordability, convenience and usability) from your previous business processes? **Select one for each row.**

	Yes	No
a. Methods for producing goods or providing services (including methods related to engineering and related technical testing, analysis and certification)	<input type="checkbox"/>	<input type="checkbox"/>
b. Logistics, delivery or distribution methods	<input type="checkbox"/>	<input type="checkbox"/>
c. Marketing methods for promotion, packaging, pricing, product placement or after sales services	<input type="checkbox"/>	<input type="checkbox"/>
d. Information and communication systems (including hardware, software and data processing)	<input type="checkbox"/>	<input type="checkbox"/>
e. Administration and management activities (including decision-making, human resource management, and methods for accounting or other administrative operations)	<input type="checkbox"/>	<input type="checkbox"/>
f. Product and business process development activities (including activities to identify, develop, or adapt products or processes, or adopting new methodologies for developing products and processes)	<input type="checkbox"/>	<input type="checkbox"/>

If “No” is selected for all of ‘E.9 New or Improved Business Processes, items a. – f.’, skip to ‘E.12 Goods, Services, or Business Process Activities’ on page XX.

E.10 INNOVATION AND ENVIRONMENTAL BENEFITS WITHIN THIS BUSINESS

During the three years 2020 to 2022, did this business introduce innovations with any of the following environmental benefits obtained within this business? If yes, was the extent of that contribution a great deal or not?

	Yes, a <u>great</u> extent	Yes, but not a <u>great</u> extent	No
a. Reduced material or water use per unit of output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Reduced energy use or CO2 ‘footprint’ (i.e. reduced total CO2 emission)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Reduced soil, noise, water or air pollution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Replaced a share of materials with less polluting or hazardous substitutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Replaced a share of fossil energy with renewable energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Recycled waste, water, or materials for own use or sale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E.11 IMPROVED BUSINESS PROCESS DEVELOPERS

Who developed these new or improved business processes? **Select all that apply.**

- This business by itself
- This business together with other businesses, universities, research institutes, nonprofits, or other organizations
- This business by adapting or modifying business processes originally developed by other businesses or organizations
- Other businesses or organizations

E.12 GOODS, SERVICES, OR BUSINESS PROCESS ACTIVITIES

During the three years 2020 to 2022, did this business have any of the following types of innovation activities?

- Include all developmental, financial, and commercial activities that were intended to result in a new or improved good, service or business process that differed significantly from your previous goods, services, or business processes.
- Similar activities that were not intended to result in a new or improved good, service or business process should not be reported here. (e.g., employee training intended for general maintenance of skills are not considered “innovation activities”)
- Simple replacement of machinery without enhanced capabilities are not considered “innovation activities”

Select one for each row.

	Yes	No
--	-----	----

a. Research and development: creative and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge	<input type="checkbox"/>	<input type="checkbox"/>
b. Engineering and design activities: planning of technical specifications, testing, evaluation, setup and pre-production for goods, services, processes or systems; installing equipment, tooling- up, testing, trials and user demonstrations; and activities to extract knowledge or design information from existing products or process equipment. Also include activities to develop a new or modified function, form or appearance for goods, services, or processes	<input type="checkbox"/>	<input type="checkbox"/>
c. Marketing and brand equity activities: include market research, market testing, methods for pricing, product placement and product promotion; product advertising, the promotion of products at trade fairs or exhibitions, and the development of marketing strategies	<input type="checkbox"/>	<input type="checkbox"/>
d. Intellectual Property (IP) related activities: protection or exploitation of knowledge, often created through R&D, software development, and engineering, design and other creative work, including all related administrative and legal work	<input type="checkbox"/>	<input type="checkbox"/>
e. Employee training: activities that are paid for or subsidized by the firm to develop knowledge and skills required for the specific trade, occupation or vocation of a firm’s employees	<input type="checkbox"/>	<input type="checkbox"/>
f. Software development and database activities: in-house development and purchase of computer software; collection and analysis of data in proprietary computer databases and data obtained from publicly-available reports or the Internet; and activities to upgrade or expand the functions of IT systems, including computer program and databases	<input type="checkbox"/>	<input type="checkbox"/>
g. Acquisition of machinery, equipment and other tangible assets	<input type="checkbox"/>	<input type="checkbox"/>
h. Management related to innovation: Activities to plan, govern and control internal and external resources	<input type="checkbox"/>	<input type="checkbox"/>

If “No” is selected for all of ‘E.12 Goods, Services, or Business Process Activities, items a. - h.’, skip to ‘E.15 Reasons for No Innovation Activities’ on page XX.

All others continue to ‘E.13 Cooperation on Innovation’.

E.13 COOPERATION ON INNOVATION

During the three years 2020 to 2022, did this business cooperate with other businesses or organizations on any of the following? (Cooperation occurs when two or more participants agree to take responsibility for a task or series of tasks and information is shared between the parties to facilitate the agreement.)

Select one for each row.

	Yes	No
a. On R&D	<input type="checkbox"/>	<input type="checkbox"/>
b. On other innovation activities (excluding R&D)	<input type="checkbox"/>	<input type="checkbox"/>
c. On any other business activities	<input type="checkbox"/>	<input type="checkbox"/>

If “Yes” is selected for ‘E.13 Cooperation on Innovation - item a, b, OR c.’, continue to ‘E.14 Cooperation Partner Locations’.

All others skip to ‘E.16 Results of Innovation Activities’ on page XX.

E.14 COOPERATION PARTNER LOCATIONS

Indicate the type of innovation cooperation partner by location during the three years 2020 to 2022.

Select all that apply.

Type of innovation co-operation partner:	United States	Canada/Mexico	Rest of World
a. Consultants, commercial labs, or private research institutes <u>outside your business group</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Suppliers of equipment, materials, components, or software <u>outside your business group</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Companies that are your clients or customers <u>outside your business group</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Companies that are your competitors <u>outside your business group</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Other companies <u>outside your business group</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Companies <u>within your business group</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Universities or other higher education institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Government or public research institutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Clients or customers from the public sector: public sector includes government owned organizations such as local, regional and national administrations and agencies, schools, hospitals, and government providers of services such as security, transport, housing, energy, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Nonprofit organizations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Go to ‘E.16 Results of Innovation Activities’ on page XX.

E.15 REASONS FOR NO INNOVATION ACTIVITIES

Which of the following reasons best describes why this business did not have innovation activities during the three years 2020 to 2022.

- A lack of resources prevented innovating (e.g. lack of finance, qualified personnel, material)
- Decided not to innovate due to reasons other than lack of resources (e.g. strategic reasons; not the right time to innovate; other priorities; risks too high; low expected returns)
- Business had no need for innovating

Go to ‘E.19 Government Support’ on page XX.

E.16 RESULTS OF INNOVATION ACTIVITIES

During the three years 2020 to 2022, did this business have any innovation activities that did not result in a goods, services, or business process innovation because the activities were:

Select one for each row.

	Yes	No
--	-----	----

a. Abandoned or suspended before completion	<input type="checkbox"/>	<input type="checkbox"/>
b. Still ongoing at the end of 2022	<input type="checkbox"/>	<input type="checkbox"/>

E.17 ACTIVITY COSTS

In 2022, how much did this business spend on the innovation activities selected in ‘E.12 Goods, Services or Business Process Activities’? *Note that this question refers only to the year 2022 and not the three-year period, 2020 – 2022. Estimates are acceptable.*

- a. Research and development
- b. Engineering and design activities
- c. Marketing and brand equity activities
- d. Intellectual Property (IP) related activities
- e. Employee training
- f. Software development and database activities
- g. Acquisition of machinery, equipment and other tangible assets
- h. Management related to innovation

Total \$Mil/Tho/Dol
_____ ,000

If “Yes” is selected for ‘item a. Research and Development’ from ‘E.12 Goods, Services, or Business Process Activities’ and Total Number of W-2 Paid Employees or Employee/Owners from ‘A.8 Number of W-2 Paid Employees or Employee/Owners’ is greater than or equal to 10 and response to ‘E.17 Activity Costs’ does not equal zero, continue to ‘E.18 - R&D for Activity Costs’.

All others **skip to ‘E.19 – Government Support’** on page XX.

E.18 R&D FOR ACTIVITY COSTS

Of the ‘E.15 Activity Costs’ reported, how much was for research and development (creative and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge) in 2022?

\$Mil/Tho/Dol
 _____ ,000

E.19 GOVERNMENT SUPPORT

During the three years 2020 to 2022, did this business use any of the following types of government programs (federal, state, or local) to aid innovation?

Select one for each row.

	Yes	No
a. Government tax incentive or tax credit programs: Include programs intended to support innovation activities such as research and development or capital expenditures	<input type="checkbox"/>	<input type="checkbox"/>
b. Government grants and contributions programs: Include programs intended to support innovation activities such as research and development, business development or commercialization of intellectual property	<input type="checkbox"/>	<input type="checkbox"/>

c. Government training and hiring programs: Include programs intended to support innovation activities such as hiring and training of researchers, interns or other personnel	<input type="checkbox"/>	<input type="checkbox"/>
d. Government procurement: Include programs intended to support innovation such as the procurement of new or improved goods, services or businesses processes	<input type="checkbox"/>	<input type="checkbox"/>
e. Other government programs: Include programs and activities to support innovation not included elsewhere such as access to facilities, export incentives, technical assistance, market information or loans	<input type="checkbox"/>	<input type="checkbox"/>

E.20 BARRIERS OF INNOVATION

During the three years 2020 to 2022, how, if at all, were each of the following factors in discouraging this business to conduct innovation activities:

Select one from each row.

	Very discouraging	Somewhat discouraging	A little discouraging	Not at all discouraging
a. Lack of internal finance for innovation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Lack of credit or private equity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Difficulties in obtaining public grants or subsidies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Costs too high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Lack of skilled employees within this business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Lack of collaboration partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Lack of access to external knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Uncertain market demand for your ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Too much competition in your market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Different priorities within this business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Government regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E.21 BUSINESS STRATEGIES

During the three years 2020 to 2022, to what extent did the business focus on the following business strategies?

Select one for each row.

	A great extent	To some extent	To a small extent	Not at all
a. Improve existing goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Introduce new goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Reduce prices for goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Increase the quality of goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Develop a broad range of products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Develop one or a small number of key products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Satisfy established customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Reach out to new customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

i. Develop standardized goods or services (e.g., goods or services are the same regardless of market or customer type)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Develop customer-specific solutions (e.g., customized goods or services)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section F: Financing

The following section collects information on the financing practices of the business, including the business's credit-seeking activity for the 12 months ending December 31, 2022.

F.1 ADDITIONAL FINANCING NEEDED

For the 12 months ending December 31, 2022, did this business need additional financing?

- Yes, business needed additional financing and the owner(s) **chose not to apply**
- Yes, business needed additional financing and the owner(s) **did apply** – Skip to 'F.3 New Credit Sources'
- No, business **did not need** additional financing – Skip to 'F.6 Profitability'

F.2 REASON FOR AVOIDANCE OF ADDITIONAL FINANCING NEEDED

Why did this business choose not to apply for additional financing? **Select all that apply.**

- Did not think business would be approved by lender
- Did not want to accrue debt
- Decided the financing costs would be too high
- Preferred to reinvest the business profits instead
- Felt the loan search/application process would be too time consuming
- Decided to wait until funding conditions improved
- Decided to wait until business hit milestones to be in stronger position to raise funds
- None of the above

Go to 'F.6 Profitability' on page xx.

F.3 NEW CREDIT SOURCES

For the 12 months ending December 31, 2022, from what lenders did this business apply for new credit? **Select all that apply.**

- Bank (financial institution that accepts deposits and extends credit, either in person or online)
- Credit union (non-profit financial institution that provides banking services, including loans, to its members)
- Fintech/online lender (type of finance company that operates exclusively online and/or by phone to issue loans or lines of credit, usually with no collateral requirements. Includes payments companies that offer loans and cash advances to merchants)
- Finance company (company that provides loans or leases but unlike a bank does not accept deposits or offer banking services. Examples include mortgage companies, equipment dealers, and auto finance companies)

- Community Development Financial Institution (CDFI) (financial institution certified by the U.S. Department of the Treasury that provides credit, financial services, and technical assistance to underserved people or places)
- Other, specify: _____

F.4 NEW CREDIT RECEIVED

For the 12 months ending December 31, 2022, how much of the total amount of credit requested did this business receive?

- None
- Some
- All
- Don't know

F.5 BUSINESS FINANCING USES

For the 12 months ending December 31, 2022, for what purpose did this business seek financing? **Select all that apply.**

- Meet operating expenses
- Expand business, pursue new opportunity, or acquire business assets
- Replace capital assets or make repairs
- Refinance or pay down debt
- Other, specify: _____

F.6 PROFITABILITY

For the 12 months ending December 31, 2022, did this business have profits, losses, or break even?

- Profits
- Losses
- Break even

F.7 NEGATIVE IMPACT ON PROFITABILITY

For the 12 months ending December 31, 2022, which of the following negatively impacted profitability of this business? Only include responses that impacted profitability. **Select all that apply.**

- Access to financial capital
- Cost of financial capital
- Finding qualified labor
- Taxes
- Government regulations (for example, U.S. Federal, state and/or local)
- Slow business or lost sales
- Customers or clients not making payments or paying late
- The unpredictability of business conditions
- Changes or updates in technology
- None of the above

When answering the following questions, please factor in the coronavirus pandemic and how it affected this business.

F.8 EFFECT OF CORONAVIRUS PANDEMIC ON BUSINESS SALES

How would you assess the overall effect of the coronavirus pandemic on this business's sales in 2022?

- Increased significantly
- Increased somewhat
- Had little to no change
- Decreased somewhat
- Decreased significantly

F.9 FINANCIAL HEALTH OF THE BUSINESS

In 2022, how concerned are you about the financial health of this business?

- Not that concerned
- Somewhat concerned
- Very concerned

F.10 OUTSTANDING DEBT FOR THE BUSINESS

What is the total amount of this business's current outstanding debt? **Round to the nearest one thousand dollars. If none, report zero.**

Bil./Mil./Thou.

\$ _____,000

- Don't know

F.11 LEVEL OF OPERATIONS DURING THE CORONAVIRUS PANDEMIC

Will this business be able to maintain operations into the next year (2024)?

- Yes, at or above the current level of operations
- Yes, at or below the current level of operations
- No
- Don't know

Section G: Technology and Intellectual Property

The following section collects information on intellectual property and technology use for the business. Technology related questions in this section asks about the following technologies:

Artificial Intelligence: Artificial intelligence is a branch of computer science and engineering devoted to making machines intelligent. Intelligence is that quality that enables an entity to perceive, analyze, determine response and act appropriately in its environment.

Cloud-based Computing Systems and Applications: Cloud systems and applications are computing resources available on-demand via the internet.

Specialized Software (excluding Artificial Intelligence): Specialized software is software dedicated to performing a particular business function.

Robotics: Robotic equipment (or robots) are automatically controlled, reprogrammable, and multipurpose machines used in automated operations in industrial and service environments.

Specialized Equipment (excluding Robotics): Specialized equipment is equipment capable of automatically carrying out pre-specified task(s).

The questions in this section ask about the three years 2020 to 2022 time period, instead of one year as in other sections of this survey.

G.1 INTELLECTUAL PROPERTY ACTIVITIES

Indicate whether this business did any of the following during 2022.

Select one for each row.

	Yes	No
a. Transferred intellectual property (IP) to others not owned by this business through participation in technical assistance or "know - how" agreements	<input type="checkbox"/>	<input type="checkbox"/>
b. Received IP from others not owned by this business through participation in technical assistance or "know-how" agreements	<input type="checkbox"/>	<input type="checkbox"/>
c. Participated in cross-licensing agreements in which two or more parties grant a license to each other for the use of the subject matter claimed in one or more of the patents owned by each party	<input type="checkbox"/>	<input type="checkbox"/>
d. Allowed free use of patents or other IP owned by this business (for example, allowing free use of software patents by the open source community)	<input type="checkbox"/>	<input type="checkbox"/>
e. Made use of open source patents or other freely available IP not owned by this business	<input type="checkbox"/>	<input type="checkbox"/>

G.2 IMPORTANCE OF INTELLECTUAL PROPERTY

During 2022, how important were the following types of intellectual property protection to this business?

Select one for each row.

	Very Important	Somewhat Important	Not Important
a. Utility patents (patents for inventions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Design patents (patents for appearance)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Trademarks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Copyrights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Trade secrets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Nondisclosure agreements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G.3 PRODUCTION TECHNOLOGY FOR GOODS AND SERVICES

During the three years 2020 to 2022, did this business adopt/use the following technologies?

Artificial Intelligence

- This technology is not applicable to this business
- Applicable, but did not test or use
- Tested, but did not use as part of the processes or methods
- Used as part of the processes or methods
- Don't know

Cloud-based Computing Systems and Applications

- This technology is not applicable to this business
- Applicable, but did not test or use
- Tested, but did not use as part of the processes or methods
- Used as part of the processes or methods
- Don't know

Specialized Software

- This technology is not applicable to this business
- Applicable, but did not test or use
- Tested, but did not use as part of the processes or methods
- Used as part of the processes or methods
- Don't know

Robotics

- This technology is not applicable to this business
- Applicable, but did not test or use
- Tested, but did not use as part of the processes or methods
- Used as part of the processes or methods
- Don't know

Specialized Equipment

- This technology is not applicable to this business
- Applicable, but did not test or use
- Tested, but did not use as part of the processes or methods

- Used as part of the processes or methods
- Don't know

If all answers to **G.3** are “**This technology is not applicable to this business**”, “**Applicable, but did not test or use**”, “**Tested, but did not use as part of the processes or methods**”, or “**Don't know**” then proceed to ‘**G.29 – Impact of the Coronavirus Pandemic on Automation**’ on page XX.

If answer for **Artificial Intelligence** is “**Used as part of the processes or methods**” then answer questions **G.4 - G.8** on page XX.

If answer for **Cloud-based Computing Systems and Applications** is “**Used as part of the processes or methods**” then answer questions **G.9 - G.13** on page XX.

If answer for **Specialized Software** is “**Used as part of the processes or methods**” then answer questions **G.14 - G.18** on page XX.

If answer for **Robotics** is “**Used as part of the processes or methods**” then answer questions **G.19 - G.23** on page XX.

If answer for **Specialized Equipment** is “**Used as part of the processes or methods**” then answer questions **G.24 - G.28** on page XX.

G.4 IMPORTANCE OF ARTIFICIAL INTELLIGENCE TECHNOLOGY - PROCESSES AND METHODS

How important was **Artificial Intelligence** for the processes and methods used by this business?

- Not important
- Somewhat important
- Very important

G.5 MOTIVATION FOR ARTIFICIAL INTELLIGENCE TECHNOLOGY ADOPTION AND UTILIZATION - PROCESSES AND METHODS

During the three years 2020 to 2022, why did this business adopt or use **Artificial Intelligence**? *Select all that apply.*

- To automate tasks performed by labor
- To replace or upgrade already existing automated processes or methods
- To improve quality or reliability of processes or methods
- To improve quality or reliability of goods or services
- To expand the range of goods or services
- To adopt standards and accreditation
- Some other reason

G.6 IMPACT OF ARTIFICIAL INTELLIGENCE TECHNOLOGY ON WORKFORCE - PROCESSES AND METHODS

During the three years 2020 to 2022, what were the effects of adopting or using **Artificial Intelligence** on the following?

A. The **number of workers** employed by this business

- Increased
- Decreased

Did not change

B. The **skill level of workers** employed by this business

Increased overall

Decreased overall

Did not change overall

C. The **scientific, technological, engineering, and mathematical skills of workers** employed by this business

Increased overall

Decreased overall

Did not change overall

Not applicable, we did not employ workers with scientific, technological, engineering, and mathematical skills

G.7 IMPACT OF ARTIFICIAL INTELLIGENCE ON WORKER TYPES - PROCESSES AND METHODS

Indicate what effect **Artificial Intelligence** had on the following types of workers employed by this business during the three years 2020 to 2022.

A. The ratio of **production workers** to **non-production** workers

Increased

Decreased

Did not change

Not applicable, we did not employ production workers

Not applicable, we did not employ non-production workers

Not applicable, we did not employ production nor non-production workers

B. The ratio of **non-supervisory** workers to **supervisory** workers

Increased

Decreased

Did not change

Not applicable, we did not employ supervisory workers

Not applicable, we did not employ non-supervisory workers

Not applicable, we did not employ supervisory nor non-supervisory workers

G.8 TIMING OF ADOPTION FOR ARTIFICIAL INTELLIGENCE - PROCESSES AND METHODS

Approximately what year did this business first adopt or use **Artificial Intelligence** in processes and methods?

Prior to 1990

1991 - 1995

1996 - 2000

2001 - 2005

2006 - 2010

2011 - 2015

- 2016 - 2020
- 2021 - Present
- Don't know

G.9 IMPORTANCE OF CLOUD-BASED COMPUTING SYSTEMS AND APPLICATIONS TECHNOLOGY - PROCESSES AND METHODS

How important was **Cloud-based Computing Systems and Applications** for the processes and methods used by this business?

- Not important
- Somewhat important
- Very important

G.10 MOTIVATION FOR CLOUD-BASED COMPUTING SYSTEMS AND APPLICATIONS TECHNOLOGY ADOPTION AND UTILIZATION - PROCESSES AND METHODS

During the three years 2020 to 2022, why did this business adopt or use **Cloud-based Computing Systems and Applications**? *Select all that apply.*

- To automate tasks performed by labor
- To replace or upgrade already existing automated processes or methods
- To improve quality or reliability of processes or methods
- To improve quality or reliability of goods or services
- To expand the range of goods or services
- To adopt standards and accreditation
- Some other reason

G.11 IMPACT OF CLOUD-BASED COMPUTING SYSTEMS AND APPLICATIONS TECHNOLOGY ON WORKFORCE - PROCESSES AND METHODS

During the three years 2020 to 2022, what were the effects of adopting or using **Cloud-based Computing Systems and Applications** on the following?

A. The **number of workers** employed by this business

- Increased
- Decreased
- Did not change

B. The **skill level of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall

C. The **scientific, technological, engineering, and mathematical skills of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall

- Not applicable, we did not employ workers with scientific, technological, engineering, and mathematical skills

G.12 IMPACT OF CLOUD-BASED COMPUTING SYSTEMS AND APPLICATIONS ON WORKER TYPES - PROCESSES AND METHODS

Indicate what effect **Cloud-based Computing Systems and Applications** had on the following types of workers employed by this business during the three years 2020 to 2022.

A. The ratio of **production workers** to **non-production** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ production workers
- Not applicable, we did not employ non-production workers
- Not applicable, we did not employ production **nor** non-production workers

B. The ratio of **non-supervisory** workers to **supervisory** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ supervisory workers
- Not applicable, we did not employ non-supervisory workers
- Not applicable, we did not employ supervisory **nor** non-supervisory workers

G.13 TIMING OF ADOPTION FOR CLOUD-BASED COMPUTING SYSTEMS AND APPLICATIONS - PROCESSES AND METHODS

Approximately what year did this business first adopt or use **Cloud-based Computing Systems and Applications** in processes and methods?

- Prior to 1990
- 1991 - 1995
- 1996 - 2000
- 2001 - 2005
- 2006 - 2010
- 2011 - 2015
- 2016 - 2020
- 2021 - Present
- Don't know

G.14 IMPORTANCE OF SPECIALIZED SOFTWARE TECHNOLOGY - PROCESSES AND METHODS

How important was **Specialized Software** for the processes and methods used by this business?

- Not important
- Somewhat important
- Very important

G.15 MOTIVATION FOR SPECIALIZED SOFTWARE TECHNOLOGY ADOPTION AND UTILIZATION - PROCESSES AND METHODS

During the three years 2020 to 2022, why did this business adopt or use **Specialized Software**? *Select all that apply.*

- To automate tasks performed by labor
- To replace or upgrade already existing automated processes or methods
- To improve quality or reliability of processes or methods
- To improve quality or reliability of goods or services
- To expand the range of goods or services
- To adopt standards and accreditation
- Some other reason

G.16 IMPACT OF SPECIALIZED SOFTWARE TECHNOLOGY ON WORKFORCE - PROCESSES AND METHODS

During the three years 2020 to 2022, what were the effects of adopting or using **Specialized Software** on the following?

A. The **number of workers** employed by this business

- Increased
- Decreased
- Did not change

B. The **skill level of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall

C. The **scientific, technological, engineering, and mathematical skills of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall
- Not applicable, we did not employ workers with scientific, technological, engineering, and mathematical skills

G.17 IMPACT OF SPECIALIZED SOFTWARE TECHNOLOGY ON WORKER TYPES - PROCESSES AND METHODS

Indicate what effect **Specialized Software** had on the following types of workers employed by this business during the three years 2020 to 2022.

A. The ratio of **production workers** to **non-production** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ production workers

- Not applicable, we did not employ non-production workers
- Not applicable, we did not employ production nor non-production workers

B. The ratio of **non-supervisory** workers to **supervisory** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ supervisory workers
- Not applicable, we did not employ non-supervisory workers
- Not applicable, we did not employ supervisory nor non-supervisory workers

G.18 TIMING OF ADOPTION FOR SPECIALIZED SOFTWARE - PROCESSES AND METHODS

Approximately what year did this business first adopt or use **Specialized Software** in processes and methods?

- Prior to 1990
- 1991 - 1995
- 1996 - 2000
- 2001 - 2005
- 2006 - 2010
- 2011 - 2015
- 2016 - 2020
- 2021 - Present
- Don't know

G.19 IMPORTANCE OF ROBOTICS TECHNOLOGY - PROCESSES AND METHODS

How important was **Robotics** for the processes and methods used by this business?

- Not important
- Somewhat important
- Very important

G.20 MOTIVATION FOR ROBOTICS TECHNOLOGY ADOPTION AND UTILIZATION - PROCESSES AND METHODS

During the three years 2020 to 2022, why did this business adopt or use **Robotics**? *Select all that apply.*

- To automate tasks performed by labor
- To replace or upgrade already existing automated processes or methods
- To improve quality or reliability of processes or methods
- To improve quality or reliability of goods or services
- To expand the range of goods or services
- To adopt standards and accreditation
- Some other reason

G.21 IMPACT OF ROBOTICS TECHNOLOGY ON WORKFORCE - PROCESSES AND METHODS

During the three years 2020 to 2022, what were the effects of adopting or using **Robotics** on the following?

A. The **number of workers** employed by this business

- Increased
- Decreased
- Did not change

B. The **skill level of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall

C. The **scientific, technological, engineering, and mathematical skills of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall
- Not applicable, we did not employ workers with scientific, technological, engineering, and mathematical skills

G.22 IMPACT OF ROBOTICS ON WORKER TYPES - PROCESSES AND METHODS

Indicate what effect **Robotics** had on the following types of workers employed by this business during the three years 2020 to 2022.

A. The ratio of **production workers** to **non-production** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ production workers
- Not applicable, we did not employ non-production workers
- Not applicable, we did not employ production nor non-production workers

B. The ratio of **non-supervisory** workers to **supervisory** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ supervisory workers
- Not applicable, we did not employ non-supervisory workers
- Not applicable, we did not employ supervisory nor non-supervisory workers

G.23 TIMING OF ADOPTION FOR ROBOTICS - PROCESSES AND METHODS

Approximately what year did this business first adopt or use **Robotics** in processes and methods?

- Prior to 1990
- 1991 - 1995
- 1996 - 2000
- 2001 - 2005

- 2006 - 2010
- 2011 - 2015
- 2016 - 2020
- 2021 - Present
- Don't know

G.24 IMPORTANCE OF SPECIALIZED EQUIPMENT TECHNOLOGY - PROCESSES AND METHODS

How important was **Specialized Equipment** for the processes and methods used by this business?

- Not important
- Somewhat important
- Very important

G.25 MOTIVATION FOR SPECIALIZED EQUIPMENT TECHNOLOGY ADOPTION AND UTILIZATION - PROCESSES AND METHODS

During the three years 2020 to 2022, why did this business adopt or use **Specialized Equipment**? *Select all that apply.*

- To automate tasks performed by labor
- To replace or upgrade already existing automated processes or methods
- To improve quality or reliability of processes or methods
- To improve quality or reliability of goods or services
- To expand the range of goods or services
- To adopt standards and accreditation
- Some other reason

G.26 IMPACT OF SPECIALIZED EQUIPMENT TECHNOLOGY ON WORKFORCE - PROCESSES AND METHODS

During the three years 2020 to 2022, what were the effects of adopting or using **Specialized Equipment** on the following?

A. The **number of workers** employed by this business

- Increased
- Decreased
- Did not change

B. The **skill level of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall

C. The **scientific, technological, engineering, and mathematical skills of workers** employed by this business

- Increased overall
- Decreased overall
- Did not change overall

- Not applicable, we did not employ workers with scientific, technological, engineering, and mathematical skills

G.27 IMPACT OF SPECIALIZED EQUIPMENT ON WORKER TYPES - PROCESSES AND METHODS

Indicate what effect **Specialized Equipment** had on the following types of workers employed by this business during the three years 2020 to 2022.

A. The ratio of **production workers** to **non-production** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ production workers
- Not applicable, we did not employ non-production workers
- Not applicable, we did not employ production nor non-production workers

B. The ratio of **non-supervisory** workers to **supervisory** workers

- Increased
- Decreased
- Did not change
- Not applicable, we did not employ supervisory workers
- Not applicable, we did not employ non-supervisory workers
- Not applicable, we did not employ supervisory nor non-supervisory workers

G.28 TIMING OF ADOPTION FOR SPECIALIZED EQUIPMENT - PROCESSES AND METHODS

Approximately what year did this business first adopt or use **Specialized Equipment** in processes and methods?

- Prior to 1990
- 1991 - 1995
- 1996 - 2000
- 2001 - 2005
- 2006 - 2010
- 2011 - 2015
- 2016 - 2020
- 2021 - Present
- Don't know

G.29 IMPACT OF THE CORONAVIRUS PANDEMIC ON AUTOMATION

During the three years 2020 to 2022, did the coronavirus pandemic effect the automation of tasks performed by labor in this business? Automation refers to automatically controlled operation of an apparatus, process, or system by mechanical or electronic devices or software that take the place of human labor.

- Yes, increased automation of tasks performed by labor
- Yes, decreased automation of tasks performed by labor
- No, did not change automation of tasks performed by labor

- Not applicable, this business did not have any tasks performed by labor that could be automated

G.30 TECHNOLOGY BASED GOODS AND SERVICES

During the three years 2020 to 2022, did this business sell the following technologies or provide goods or services that included the following technologies?

Artificial Intelligence

- Yes
 No
 Don't Know

Cloud-based Computing Systems and Applications

- Yes
 No
 Don't Know

Specialized Software

- Yes
 No
 Don't Know

Robotics

- Yes
 No
 Don't Know

Specialized Equipment

- Yes
 No
 Don't Know

Section H: Sustainability and Climate Impact

The next questions ask about this business’s response to or anticipation of sustainability management and climate related demands. Sustainability management addresses how the operation of the business is affected by demands from consumers, other businesses, and the government to meet the environmental needs of present and future generations.

H.1 ENERGY OR CARBON EMISSIONS TRACKING

Does this business track energy use or carbon emissions from the following sources?

Select one for each row.

	No, does not track either	Yes, tracks Energy Expenditures	Yes, tracks Carbon Emissions	Source is not applicable to this business or is inaccessible
a. Heating of buildings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cooling of buildings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Fleet transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Electricity (used for lighting, computing, HVAC, production, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Thermal energy in production (for example, from natural gas, petroleum, coal, biomass, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

H.2 CARBON EMISSIONS REDUCTION PLAN

Has this business developed plans for reducing carbon emissions?

- Yes - **Skip to ‘H.4 Carbon Emissions Strategies’ on page XX**
- No

H.3 FUTURE PLANS FOR CARBON EMISSIONS

Is this business considering developing plans in the future for reducing carbon emissions?

- Yes
- No - **Skip to ‘H.7 Sustainability Alternatives’ on page XX**

H.4 CARBON EMISSIONS STRATEGIES

Will this business implement any of the following strategies to reduce carbon emissions?

Select one for each row.

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. Eliminating products or activities reliant on fossil fuel use by changing the company's product or service mix | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Replacing fossil fuel using activities with zero or low emissions alternatives (for example, adding electric vehicles to the company's fleet) | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Reducing carbon emissions by increasing the efficiency of activities using fossil fuels | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Offsetting carbon emissions that cannot be abated by supporting projects that reduce carbon emissions elsewhere (e.g., providing funds for reforestation or capping abandoned oil wells) | <input type="checkbox"/> | <input type="checkbox"/> |

H.5 CARBON EMISSIONS REDUCTION GOAL DATE

What is the target date for achieving this business's carbon emissions reduction goals?

- No target date set
- No later than 2030
- No later than 2040
- No later than 2050
- After 2050

H.6 CARBON EMISSIONS REDUCTION GOAL OBJECTIVE

How much of a reduction carbon emissions is this business planning?

- No reduction goal set
- Less than 25% reduction
- 25-50% reduction
- More than 50%, but less than 100% reduction
- 100% reduction

H.7 SUSTAINABILITY ALTERNATIVES

If this business is not successful at improving sustainability, does the business foresee any of the following effects?

Select one for each row.

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. Fines for lack of compliance with regulations | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Inability to raise capital or secure credit | <input type="checkbox"/> | <input type="checkbox"/> |
| c. A loss of customer trust | <input type="checkbox"/> | <input type="checkbox"/> |
| d. A loss of brand reputation | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Hiring difficulties or lower employee retention | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Financial risks associated with future policy changes such as a carbon tax | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Lost sales due to inability to provide emissions or other environmental information to potential customers | <input type="checkbox"/> | <input type="checkbox"/> |

H.8 SUSTAINABILITY INVESTMENTS

Is this business making any of the following investments to improve sustainability?

Select one for each row.

	Yes	No	Not applicable
a. Purchase power agreements for renewable energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Renewable energy generation on-site (e.g., solar, wind, geothermal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Battery storage or other means of saving renewable energy generation for later use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Improved energy efficiency and management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Engineering innovation to improve sustainability of our materials (e.g., innovating to produce goods with lower CO2 content)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Redesigning processes to make similar products with less environmental impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Elimination of waste through circular economy or design for re-use strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Recycling initiative going beyond municipal mandates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

H.9 EXTREME WEATHER EVENTS AND IMPACT

During the three years 2020 to 2022, has this business experienced monetary losses due to extreme weather events? *For example, hurricanes, floods, droughts, or heat waves.*

Include:

- Incurred costs
- Losses of sales or assets

- Yes
- No
- Don't Know

H.10 INVESTMENTS TO MITIGATE RISKS

During the three years 2020 to 2022, has this business undertaken investments to reduce the risk of damages caused by extreme weather events? *For example, hurricanes, floods, droughts, wildfires, or heat waves.*

- Yes
- No
- Don't Know

H.11 FUTURE IMPACTS DUE TO EXTREME WEATHER

During the next decade, how likely is this business to experience negative impacts from extreme weather events? *For example, hurricanes, floods, droughts, wildfires, or heat waves.*

- Not at all likely
- A little likely
- Somewhat likely
- Very likely
- Extremely likely

Section I: Contact Information

Enter the first and last name of the person who is filling out this survey. We request a telephone number so we can contact you if there is a question.

Contact Name

Contact Title

Area Code Phone number Ext.

Email address

Definitions

Affiliated (company or business): Entity that is owned 10% or more (based on voting interest or an equivalent interest) directly or indirectly by your company.

Artificial Intelligence: Artificial intelligence is a branch of computer science and engineering devoted to making machines intelligent. Intelligence is that quality that enables an entity to perceive, analyze, determine response and act appropriately in its environment. Systems with artificial intelligence perform functions including, but not limited to, speech recognition, machine vision, or machine learning:

- Speech recognition transforms human speech into a format useful for computer applications (for example, a digital assistant)
- Machine vision uses sensors and software that allow images to be used as an input for computer applications (for example, systems that sort or inspect objects or support navigation in mobile equipment)
- Machine learning uses statistical software and data to “learn” and make better predictions without reprogramming (for example, recommender systems for websites, or sales and demand forecasting)

Artificial Intelligence technologies also include virtual agents, deep learning platforms, decision management systems, biometrics, text analytics, and natural language generation and processing.

Business process functions: Business process includes the following: (1) methods for producing goods or providing services; (2) distribution and logistics; (3) marketing and sales; (4) information and communication systems; (5) administration and management activities; and (6) product and business process development (including activities to identify, develop or adapt products or a firm’s processes).

Cloud-based Computing Systems and Applications: Cloud systems and applications are computing resources available on-demand via the internet. Cloud computing enables ubiquitous, convenient, on-demand internet access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

Core production activity: This term refers to your primary business activities. For manufacturing companies, core production typically involves production of physical goods. For service companies and other companies, core production refers to the main services or activities provided by your business such as Information and Communication Technology services, marketing services, etc.

Domestic (or U.S.-located): refers to a location in any of the U.S. 50 states, and the District of Columbia.

Exported goods: Value of goods including the value of equipment, supplies, materials, etc. This should equal the amounts reported in the Automated Export System’s (AES) Electronic Export Information (EEI) filed with U.S. Customs and Border Protection plus the cost of transporting the goods to customers located in foreign destinations (i.e., outside the United States).

Exported services: An exported service is a service-related product (i.e., services performed, including digital service, license agreement) that is sold or transferred to, or performed for customers (individual, government, business establishment, etc.) located in foreign destinations (i.e., outside the United States).

Foreign affiliate: A foreign affiliate is an entity located outside the United States that is owned at least 10% (based on voting interest or an equivalent interest) directly or indirectly by the U.S. reporter.

Foreign parent (of a U.S.-located business): The first entity outside the United States in an affiliate's ownership chain that has a direct or indirect investment interest of more than 50 percent of the affiliate's voting securities.

Franchise: an authorization granted by a government or company to an individual or group enabling them to carry out specified commercial activities (e.g., providing a broadcasting service or acting as an agent for a company's products).

Goods: Usually a tangible object such as a smartphone, furniture, or packaged software, but also includes digital goods such as downloadable software, music, and film. (Exclude the simple resale of new goods and changes of a solely aesthetic nature.)

Imported goods: The value of goods purchased from customers located in foreign destinations (i.e., outside the United States) as indicated in import declarations filed with the U.S. Customs and Border Protection.

Imported services: An imported service is a service-related product (i.e., service performed, including digital service, license agreement) that is purchased from customers located in foreign destinations (i.e., outside the United States).

Intellectual property: Includes patents, processes, and trade secrets; books and music; trademarks; recorded performances and events such as radio and television programs and motion pictures; broadcast and recorded live performances and events and their content; general use computer software; franchise fees; and other (for example, digital media).

Nonproduction worker: A worker engaged in the following activities: supervision above the working foreman level, sales (including driver-salesman), sales delivery (highway truck drivers and their helpers), advertising, credit collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, professional, and technical. Also included are employees on the payroll of the business engaged in the construction of major additions or alterations to the plant who are utilized as a separate work force.

Nonsupervisory worker: A worker who does not supervise, plan, or direct the work of others.

Product: Products are goods and services (including knowledge-capturing products) that result from a process of production.

Production worker: A worker (up through the line supervisor level) engaged in activities or processes that result in the creation of products, goods or services. This includes those directly engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development,

auxiliary production for the own use of business (e.g. a power plant), recordkeeping, and other services closely associated with these production operations in the business covered by the report. Employees above the working-supervisor level are excluded.

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.

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

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

Robotics: Robotic equipment (or robots) are automatically controlled, reprogrammable, and multipurpose machines used in automated operations in industrial and service environments. Robots may be mobile, incorporated into stand-alone stations, or integrated into a production line. A robot may be part of a manufacturing cell or incorporated into another piece of equipment.

Industrial robots may perform operations such as: palletizing, pick and place, machine tending, material handling, dispensing, welding, packing/repacking, and cleanroom.

Service robots are commonly used in businesses for such operations as cleaning, delivery, construction, inspection, and medical services such as dispensing or surgery.

Services: Intangible activities, such as retailing, insurance, educational courses, air travel, consulting, etc., also includes digital services. (Exclude the simple resale of new services.)

Services are intangible activities that are produced and consumed simultaneously and that change the conditions (i.e., physical, psychological, etc.) of users.

Services are the result of a production activity that changes the conditions of the consuming units or facilitates the exchange of products or financial assets. They cannot be traded separately from their production. Services can also include some knowledge-capturing products.

Specialized Equipment (excluding Robotics): Specialized equipment refers to equipment capable of automatically carrying out pre-specified task(s). Specialized equipment includes, but is not limited to, computer numerically controlled (CNC) machinery, computer-aided manufacturing (CAM) systems, manufacturing cells, materials working lasers, automated guided vehicles systems, automated storage and retrieval systems, and automated materials handling systems. Exclude robotics equipment reported above.

Specialized Software (excluding Artificial Intelligence): Specialized software is custom or packaged software dedicated to performing a particular business function. Specialized software includes, but is not limited to, software applications for accounting, sales, marketing, customer service and billing, logistics, health care delivery, telemedicine, computer-aided design (CAD), computer-aided engineering (CAE), or inventory management. Specialized software excludes general purpose software such as word processing or spreadsheets. Exclude Artificial Intelligence software reported above.

Supervisory worker: A worker whose major responsibility is to supervise, plan, or direct the work of others, such as top executive and managerial positions, officers of corporations, department heads, and superintendents.

Unaffiliated (company or business): Entity that is owned less than 10 percent, directly or indirectly, by your company (i.e., independent contractors and suppliers).

