## Revised ABS Innovation Module

## SECTION C: PRODUCTS AND BUSINESS PROCESSES

The following section collects information on the business’s introduction of a new or improved product (goods or services) or business process that differed significantly from the business’s previous products or processes.

The products (goods or services) or business processes must have characteristics or intended uses that are new or which provide a significant improvement over what was previously used or sold by the business. However, they can fail or take time to prove themselves.

The products or business process need only be new or improved for the business. It could have been originally developed or used by other businesses or organizations.

The following section asks about the three previous years including the calendar year 2018 instead of one year as in other sections of this questionnaire.

### New or improved goods or services

During the three years 2016 to 2018, did this business introduce to the market any new or improved goods or services that differed significantly from the business’s previous goods or services?

***Select one for each row.*** Yes No

1. Goods. *(Exclude the simple resale of new goods and changes of a solely aesthetic nature.)* A good is usually a tangible object such as a smartphone, furniture, or packaged software, but also includes digital goods such as downloadable software, music and film.
2. Services. (E*xclude the simple resale of new services.)* A service is usually intangible, such as retailing, insurance, educational courses, air travel, consulting, etc., and also includes digital services.

If ‘No’ is selected for a. and b., skip to ‘Process Innovation’

### NOVELTY OF New or improved goods or services

During the three years 2016 to 2018, did this business introduce any new or improved goods or services that were:

***Select one for each row.*** Yes No

**New to the market?** This business introduced a new or improved product (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 product (good or service) that was identical or very similar to products already offered by your competitors

### New or improved goods or services AS PERCENT OF TOTAL SALES

Using the definitions in the previous question, what percentage of this business’s ‘A.11 DOMESTIC SALES AND REVENUES’ in 2018 sales and revenues were attributable to or originated from domestic operations:

a. New or improved goods and services introduced during 2016 to 2018 that were %

**new to your market.**

b. New or improved goods and services introduced during 2016 to 2018 that were %

**new only to this business.**

c. Goods and services that were unchanged or only marginally modified during 2016 %

to 2018 (include the resale of new goods or services purchased from other companies

Total sales in 2018 100%

**Expectations**

As of December 2018, did the new or improved products introduced during 2016 to 2018 meet your business’s expectations?

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

### SOURCES OF New or improved goods or services

Who developed these new or improved products (goods and 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 products originally developed by other businesses or organizations

Other businesses or organizations

**PRODUCT COOPERATION PARTNERS**

(This question should be asked only of respondents who selected option 2 or 4 of the above question.)

During the three years 2016 to 2018, did this business cooperate with any of the following partners in developing new or improved goods or services?

Yes No

1. Parent, affiliated, or subsidiary business
2. Suppliers of equipment, materials, components, or software
3. Clients or customers from the private sector
4. Clients or customers from the public sector
5. Competitors or other businesses in your industry
6. Consultants and commercial laboratories
7. Universities, colleges or other higher education institutions
8. Government, public or private research institutes
9. Non-profit organizations
10. Households or individuals

Where were these businesses or organizations located? ***Select all that apply***

[NOTE: Question below is populated only with yes responses from above]

United Canada Rest of

States or Mexico World

1. Parent, affiliated, or subsidiary business
2. Suppliers of equipment, materials, components, or software
3. Clients or customers from the private sector
4. Clients or customers from the public sector
5. Competitors or other businesses in your industry
6. Consultants and commercial laboratories
7. Universities, colleges or other higher education institutions
8. Government, public or private research institutes
9. Non-profit organizations
10. Households or individuals

**MOST IMPORTANT INNOVATION**

Think about the most important good or service your company introduced during 2016 to 2018, was that good or service new to the market or new only to your business?

Yes No

**New to the market -** This business introduced a new or improved product (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 product (good or service) that was identical or very similar to products already offered by your competitors

**MOST IMPORTANT INNOVATION AND SALES**

What percentage of this business’s domestic sales and revenues in 2018 were attributed to your company’s most important innovation?

%

### NEW OR IMPROVED BUSINESS ProcessES

During the three years 2016 to 2018, did this business introduce any of the following types of new or improved business processes that differ significantly from your previous business processes?

Yes No

1. Methods for producing goods or providing services

(including methods for developing goods or services)

1. Logistics, delivery or distribution methods
2. Marketing methods for promotion, packaging, pricing, product

placement or after sales services

1. Information and communication systems

(including hardware, software and data processing)

1. Administration and management activities (including decision-making,

human resource management, and methods for

accounting or other administrative operations)

1. Product and business process development activities (including

activities to identify, develop or adapt products or processes)

If ‘No’ is selected for a. – f., SKIP to ‘Innovation Activities’

### 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

### Activities for new or improved products or business processes

During the three years 2016 to 2018, 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 product or business process that differed significantly from your previous products or processes.

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

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

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

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

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

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

g. **Acquisition of machinery, equipment and other tangible assets**

h. **Management related to innovation**: Activities to plan, govern and control internal and external resources

If ‘No’ is selected for a.-h. AND total NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS from question ‘NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS’ is between 1 and 9, skip to SECTION D: ReseARCH AND DEVELOPMENT.

If ‘No’ is selected for a.-h. AND total NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS from question ‘NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS’ is greater than or equal to 10, skip to SECTION E: Technology and intellectual property.

**ACTIVITY COSTS**

How much did this business spend on the innovation activities selected in the previous question in 2018? *Note that this question refers only to the year 2018 and not 2016 – 2018.*

$Mil. Thou. Dol.

,000

If yes is selected for a. from question ‘Innovation Activities’ AND total NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS from question ‘NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS’ is greater than or equal to 10 AND response to ‘Innovation Cost’ does not equal zero, continue to ‘R&D INNOVATION COSTS’.

If response to ‘Innovation Cost’ equals zero AND total NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS from question ‘NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS’ is between 1 and 9, skip to Section D: Research and Development.

If response to ‘Innovation Cost’ equals zero AND total NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS from question ‘NUMBER OF W-2 PAID EMPLOYEES OR EMPLOYEE/OWNERS’ is greater than or equal to 10, skip to SECTION E: Technology and intellectual property.

### R&D FOR ACTIVITY COSTS

Of the ‘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 2018?

$Mil. Thou. Dol.

,000

**government support**

During the three years 2016 to 2018, did this business use any of the following types of government programs (federal, state, or local) to aid the following innovation activities?

* Research and development
* Engineering and design activities
* Marketing and brand equity activities
* Intellectual Property (IP) related activities
* Employee training
* Software development and database activities
* Acquisition of machinery, equipment and other tangible assets
* Management related to innovation

Yes No

1. **Government tax incentive or tax credit programs:** Include programs intended to support innovation activities such as research and development or capital expenditures
2. **Government grants and contributions programs:** Include programs intended to support innovation activities such as research and development, business development or commercialization of intellectual property
3. **Government training and hiring programs**: Include programs intended to support innovation activities such as hiring and training of researchers, interns or other personnel
4. **Government procurement:** Include programs intended to support innovation activities such as the procurement of new or improved goods, services or businesses processes
5. **Other government programs:** Include programs and activities not included elsewhere such as access to facilities, export incentives, technical assistance, market information or loans

**DRIVERS OF INNOVATION**

During the three years 2016 to 2018, how important were each of the following factors in encouraging this business to conduct the following innovation activities:

* Research and development
* Engineering and design activities
* Marketing and brand equity activities
* Intellectual Property (IP) related activities
* Employee training
* Software development and database activities
* Acquisition of machinery, equipment and other tangible assets
* Management related to innovation

***Select one for each row***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Very important | Somewhat important | A little important | Not at all important |
| **MARKETS** |  |  |  |  |
| Domestic customers |  |  |  |  |
| Access to international markets |  |  |  |  |
| Suppliers and value chains |  |  |  |  |
| Availability or cost of skills |  |  |  |  |
| Availability or cost of finance |  |  |  |  |
| Competitors |  |  |  |  |
| Technical or Voluntary Consensus Standards |  |  |  |  |
| Markets for knowledge |  |  |  |  |
| Digital platforms |  |  |  |  |
| **PUBLIC POLICY** |  |  |  |  |
| Regulations |  |  |  |  |
| Functioning of courts and rules enforcement |  |  |  |  |
| Taxation |  |  |  |  |
| Public spending (level and priorities) |  |  |  |  |
| Government support for innovation |  |  |  |  |
| Government demand for innovation |  |  |  |  |
| Public infrastructure |  |  |  |  |
| General policy stability |  |  |  |  |
| **SOCIETY** |  |  |  |  |
| Consumer responsiveness to innovation |  |  |  |  |
| Favorable public opinion towards innovation |  |  |  |  |
| Level of trust among economic actors |  |  |  |  |

**BarriERS OF INNOVATION**

During the three years 2016 to 2018, how important were each of the following factors in discouraging this business to conduct the following innovation activities:

* Research and development
* Engineering and design activities
* Marketing and brand equity activities
* Intellectual Property (IP) related activities
* Employee training
* Software development and database activities
* Acquisition of machinery, equipment and other tangible assets
* Management related to innovation

***Select one for each row***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Very important | Somewhat important | A little important | Not at all important |
| Lack of internal finance for innovation |  |  |  |  |
| Lack of credit or private equity |  |  |  |  |
| Difficulties in obtaining public grants or subsidies |  |  |  |  |
| Costs too high |  |  |  |  |
| Lack of skilled employees within your enterprise |  |  |  |  |
| Lack of collaboration partners |  |  |  |  |
| Lack of access to external knowledge |  |  |  |  |
| Uncertain market demand for your ideas |  |  |  |  |
| Too much competition in your market |  |  |  |  |
| Different priorities within your enterprise |  |  |  |  |

**BUSINESS STRATEGIES**

During 2016 to 2018, 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 |
| Focusing on improving existing goods or services |  |  |  |  |
| Focusing on introducing new goods or services |  |  |  |  |
| Focusing on reducing prices for its goods and services |  |  |  |  |
| Focusing on increasing the quality of its goods and services |  |  |  |  |
| Focusing on broad range of products |  |  |  |  |
| Focusing on one or a small number of key products |  |  |  |  |
| Focusing on satisfying established customer groups |  |  |  |  |
| Focusing on reaching out to new customer groups |  |  |  |  |
| Focusing on standardized products |  |  |  |  |
| Focusing on customer-specific solutions |  |  |  |  |

**USE OF DIGITAL TECHNOLOGIES**

To what extent does your company use the following Digital Technologies for innovation activities?

***Select one for each row***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | A great extent | To some extent | To a small extent | Not at all |
| Computer infrastructure (server technologies) |  |  |  |  |
| Artificial Intelligence |  |  |  |  |
| Internet-connected devices |  |  |  |  |
| Automation |  |  |  |  |
| Mobile communication technologies |  |  |  |  |
| Cloud computing |  |  |  |  |
| The use of digital technologies for collaboration |  |  |  |  |
| Communication and value exchange (e.g. through social media) |  |  |  |  |
| Digital technologies for planning and management (e.g. enterprise resource planning, customer relationship management) or distributed ledgers (blockchain) |  |  |  |  |

**CAPABILITES FOR USING DIGITAL TECHNOLOGIES**

To what extent does your company use any of the following for innovation activities?

***Select one for each row***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | To a great extent | To some extent | To a small extent | Not at all |
| Digital integration within and across different business functions |  |  |  |  |
| Access to and ability to use data analytics to design, develop, commercialize and improve products, including data about the users of the firm’s products and their interactions with such products |  |  |  |  |
| Access to networks and the use of appropriate solutions and architectures (hardware and software) |  |  |  |  |
| Effective management of privacy and cybersecurity risks |  |  |  |  |
| Adoption of appropriate business models for digital environments, such as e-commerce, participative platforms, etc. |  |  |  |  |

**TECHNOLOGY CAPABILITIES**

*(NOTE: This section currently consists of concepts that have not been translated into questions yet. Feedback from the cognitive interviews will inform the question structure and wording)*

Technical expertise consists of a firm’s knowledge of and ability to use technology. This knowledge is derived from the skills and qualifications of its employees, including its engineering and technical workforce, accumulated experience in using the technology, the use of capital goods containing the technology, and control over the relevant IP.

* acquiring technology embodied in objects (machinery, equipment, software) from other firms or organizations
* acquiring IP rights that give ownership, exclusion rights or rights to use technical knowledge
* modifying or adapting existing technology to the firm’s specific needs
* developing new technology in house

Design capabilities are difficult to define in a way that is consistently understood by all types of firms across different countries. For the purposes of this form, design is defined as an innovation activity “aimed at planning and designing procedures, technical specifications and other user and functional characteristics for new products and business processes.”

* engineering design, including technical specifications, tooling up and prototype construction
* product design that determines the shape, color or pattern of objects, the interface between software and users, or the user experience of services
* design thinking, which is a systematic methodology for approaching the design of a good, service or system

Capabilities related to digital technologies and data analytics are part of a firm's technical expertise. These are specifically singled out because of the enabling, general purpose nature of digital technologies and data analytics.

* divergent idea generation or brainstorming
* techniques to develop an understanding of the customer experience, particularly ethnographic field research methods (observing how people use a product in real-world environments, developing an empathetic understanding of what users want in a product, etc.)
* co-design or co-creation (involvement of potential users in generating design concepts)
* prototyping and testing
* feedback from sales or marketing personnel
* evaluation of user-initiated reports of their experiences with a product (social media, online reviews and comments, etc.)
* structured data collection (feedback forms, dedicated user surveys, focus groups)