

Glossary of terms

Activities relating to the acquisition or lease of tangible assets	This includes the purchase, lease, or acquisition through a takeover of buildings, machinery, equipment, or the in-house production of such goods for own-use. The acquisition or lease of tangible assets can be innovation activities in their own right, such as when a firm purchases equipment with significantly different characteristics than the existing equipment that it uses for its business processes. The acquisition of tangible capital goods is generally not an innovation activity if it is for replacement or capital-widening investments that are unchanged, or with only minor changes compared to the firm's existing stock of tangible capital. The lease or rental of tangible assets is an innovation activity if these assets are required for the development of product or business process innovations.
Administrative data	Administrative data is the set of units and data derived from an administrative source such as business registers or tax files.
Affiliated firm	Affiliated firms include holding, subsidiary or associated companies located in the domestic country or abroad. See also <i>Enterprise group</i> .
Artificial intelligence (AI)	Artificial intelligence (AI) describes the activity and outcome of developing computer systems that mimic human thought processes, reasoning and behaviour.
Asset	An asset is a store of value that represents a benefit or series of benefits accruing to the economic owner by holding or using the asset over a period of time. Both financial and non-financial assets are relevant to innovation. Fixed assets are the result of production activities and are used repeatedly or continuously in production processes for more than one year.
Big data	Data that are too large or complex to be handled by conventional data processing tools and techniques.
Brand equity activities	See <i>Marketing and brand equity activities</i> .
Business capabilities	Business capabilities include the knowledge, competencies and resources that a firm accumulates over time and draws upon in the pursuit of its objectives. The skills and abilities of a firm's workforce are a particularly critical part of innovation-relevant business capabilities.
Business enterprise sector	<p>The Business enterprise sector comprises:</p> <ul style="list-style-type: none"> • All resident corporations, including legally incorporated enterprises, regardless of the residence of their shareholders. This includes quasi-corporations, i.e. units capable of generating a profit or other financial gain for their owners, recognised by law as separate legal entities from their owners, and set up for the purpose of engaging in market production at prices that are economically significant. • The unincorporated branches of non-resident enterprises deemed to be resident and part of this sector because they are engaged in production on the economic territory on a long-term basis. • All resident non-profit institutions that are market producers of goods or services or serve businesses.

Business innovation	A business innovation is a new or improved product or business process (or combination thereof) that differs significantly from the firm's previous products or business processes and that has been introduced on the market or brought into use by the firm.
Business innovation activities	See <i>Innovation activities (business)</i> .
Business model innovation	Business model innovation relates to changes in a firm's core business processes as well as in the main products that it sells, currently or in the future.
Business process innovation	<p>A business process innovation is a new or improved business process for one or more business functions that differs significantly from the firm's previous business processes and that has been brought into use by the firm. The characteristics of an improved business function include greater efficacy, resource efficiency, reliability and resilience, affordability, and convenience and usability for those involved in the business process, either external or internal to the firm. Business process innovations are implemented when they are brought into use by the firm in its internal or outward-facing operations. Business process innovations include the following functional categories:</p> <ul style="list-style-type: none"> • production of goods and services • distribution and logistics • marketing and sales • information and communication systems • administration and management • product and business process development.
Business strategy	A business strategy includes the formulation of goals and the identification of policies to reach these goals. Strategic goals cover the intended outcomes over the mid- and long-term (excluding the goal of profitability, which is shared by all firms). Strategic policies or plans include how a firm creates a competitive advantage or a "unique selling proposition".
Capital expenditures	Capital expenditures are the annual gross amount paid for the acquisition of fixed assets and the costs of internally developing fixed assets. These include gross expenditures on land and buildings, machinery, instruments, transport equipment and other equipment, as well as intellectual property products. See also <i>Current expenditures</i> .
CDM model	The CDM model (based on the initials of the three authors' names, Crépon, Duguet and Mairesse) is an econometric model widely used in empirical research on innovation and productivity. The CDM framework provides a structural model that explains productivity by innovation output and corrects for the selectivity and endogeneity inherent in survey data.
Cloud computing	Cloud systems and applications are digital storage and computing resources remotely available on-demand via the Internet.
Cognitive testing	Cognitive testing is a methodology developed by psychologists and survey researchers which collects verbal information on survey responses. It is used to evaluate the ability of a question (or group of questions) to measure constructs as intended by the researcher and if respondents can provide reasonably accurate responses.
Co-innovation	Co-innovation, or "coupled open innovation", occurs when collaboration between two or more partners results in an innovation.

Collaboration	Collaboration requires co-ordinated activity across different parties to address a jointly defined problem, with all partners contributing. Collaboration requires the explicit definition of common objectives and it may include agreement over the distribution of inputs, risks and potential benefits. Collaboration can create new knowledge, but it does not need to result in an innovation. See also <i>Co-operation</i> .
Community Innovation Survey (CIS)	The Community Innovation Survey (CIS) is a harmonised survey of innovation in enterprises co-ordinated by Eurostat and currently carried out every two years in EU member states and several European Statistical System (ESS) member countries.
Composite indicator	A composite indicator compiles multiple indicators into a single index based on an underlying conceptual model in a manner which reflects the dimensions or structure of the phenomena being measured. See also <i>Indicator</i> .
Computer-assisted personal interviewing (CAPI)	Computer-assisted personal interviewing (CAPI) is a method of data collection in which an interviewer uses a computer to display questions and accept responses during a face-to-face interview.
Computer-assisted telephone interviewing (CATI)	Computer-assisted telephone interviewing (CATI) is a method of data collection by telephone with questions displayed on a computer and responses entered directly into a computer.
Co-operation	Co-operation 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. See also <i>Collaboration</i> .
Corporations	The System of National Accounts (SNA) Corporations sector consists of corporations that are principally engaged in the production of market goods and services. This manual adopts the convention of referring to this sector as the Business enterprise sector, in line with the terminology adopted in the OECD's <i>Frascati Manual</i> .
Counterfactual	In impact evaluation, the counterfactual refers to what would have happened to potential beneficiaries in the absence of an intervention. Impacts can thus be estimated as the difference between potential outcomes under observed and unobserved counterfactual treatments. An example is estimating the causal impacts of a policy "treatment" to support innovation activities. The researcher cannot directly observe the counterfactuals: for supported firms, what would have been their performance if they had not been supported, and similarly with non-supported firms.
Cross-sectional survey	A cross-sectional survey collects data to make inferences about a population of interest (or subset) at a specific point in time.
Current expenditures	Current expenditures include all costs for labour, materials, services and other inputs to the production process that are consumed within less than one year, and the costs for leasing fixed assets. See also <i>Capital expenditures</i> .
Design	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. Design includes a wide range of activities to develop a new or modified function, form or appearance for goods, services or processes, including business processes to be used by the firm itself. Most design (and other creative work) activities are innovation activities, with the exception of minor design changes that do not meet the requirements for an innovation, such as producing an existing product in a new colour. Design capabilities include the following: (i) engineering design; (ii) product design; and (iii) design thinking.

Design Ladder	The Design Ladder is a tool developed by the Danish Design Centre for illustrating and rating a company's use of design. The Design Ladder is based on the hypothesis that there is a positive link between higher earnings, placing a greater emphasis on design methods in the early stages of development and giving design a more strategic position in the company's overall business strategy. The four steps are: (i) non-design; (ii) design as form-giving; (iii) design as process; and (iv) design as strategy.
Design thinking	Design thinking is a systematic methodology for the design process that uses design methods to identify needs, define problems, generate ideas, develop prototypes and test solutions. It can be used for the design of systems, goods, and services. Collecting data on design thinking is of value to policy because the methodology can support the innovation activities of both service and manufacturing firms, resulting in improvements to competitiveness and economic outcomes.
Diffusion (innovation)	Innovation diffusion encompasses both the process by which ideas underpinning product and business process innovations spread (innovation knowledge diffusion), and the adoption of such products, or business processes by other firms (innovation output diffusion).
Digital-based innovations	Digital-based innovations include product or business process innovations that contain ICTs, as well as innovations that rely to a significant degree on information and communication technologies (ICTs) for their development or implementation.
Digital platforms	Digital platforms are information and communication technology-enabled mechanisms that connect and integrate producers and users in online environments. They often form an ecosystem in which goods and services are requested, developed and sold, and data generated and exchanged.
Digitalisation	Digitalisation is the application or increase in use of digital technologies by an organisation, industry, country, etc. It refers to how digitisation affects the economy or society. See also <i>Digitisation</i> .
Digitisation	Digitisation is the conversion of an analogue signal conveying information (e.g. sound, image, printed text) to binary bits. See also <i>Digitalisation</i> .
Dynamic managerial capabilities	Dynamic managerial capabilities refer to the ability of managers to organise an effective response to internal and external challenges. Dynamic managerial capabilities include the following three main dimensions: (i) managerial cognition; (ii) managerial social capital; and (iii) managerial human capital.
Employee training activities	Employee training includes all activities that are paid for or subsidised by the firm to develop knowledge and skills required for the specific trade, occupation or vocation of a firm's employees. Employee training includes on-the-job training and job-related education at training and educational institutions. Examples of training as an innovation activity include training personnel to use innovations, such as new software logistical systems or new equipment; and training relevant to the implementation of an innovation, such as instructing marketing personnel or customers on the features of a product innovation.

Engineering, design and other creative work activities	Engineering, design and other creative work cover experimental and creative activities that may be closely related to research and experimental development (R&D), but do not meet all of the five R&D criteria. These include follow-up or auxiliary activities of R&D, or activities that are performed independently from R&D. Engineering involves production and quality control procedures, methods and standards. Design includes a wide range of activities to develop a new or modified function, form or appearance for goods, services or processes, including business processes to be used by the firm itself. Other creative work includes all activities for gaining new knowledge or applying knowledge in a novel way that do not meet the specific novelty and uncertainty (also relating to non-obviousness) requirements for R&D. Most design and other creative work are innovation activities, with the exception of minor design changes that do not meet the requirements for an innovation. Many engineering activities are not innovation activities, such as day-to-day production and quality control procedures for existing processes.
Enterprise	An enterprise is the smallest combination of legal units with autonomy in respect of financial and investment decision-making, as well as authority and responsibility for allocating resources for the production of goods and services. The term enterprise may refer to a corporation, a quasi-corporation, a non-profit institution or an unincorporated enterprise. It is used throughout this manual to refer specifically to business enterprises. See also <i>Business enterprise sector</i> .
Enterprise group	A set of enterprises controlled by the group head, which is a parent legal unit that is not controlled either directly or indirectly by any other legal unit. See also <i>Enterprise</i> .
Establishment	An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added. See also <i>Enterprise</i> .
Extramural innovation expenditure	Expenditures for innovation activities carried out by third parties on behalf of the firm, including extramural R&D expenditure.
Extramural R&D	Extramural research and experimental development (R&D) is any R&D performed outside of the statistical unit about which information is being reported. Extramural R&D is considered an innovation activity alongside intramural R&D. See also <i>Intramural R&D</i> .
Firm	Informal term used in this manual to refer to business enterprises. See also <i>Enterprise</i> .
Filters	Filters and skip instructions direct respondents to different parts of a questionnaire, depending on their answers to the filter questions. Filters can be helpful for reducing response burden, particularly in complex questionnaires, but they can also encourage satisficing behaviour.
Focal innovation	Data collection using the object-based method can focus on a firm's single, "focal" innovation. This is usually defined as the firm's most important innovation in terms of some measurable criteria (e.g. the innovation's actual or expected contribution to the firm's performance, the one with the highest innovation expenditures, the one with the greatest contribution to sales), but can also be the firm's most recent innovation.
Follow-on activities	Follow-on activities are efforts undertaken by firms for users of an innovation after its implementation, but within the observation period. These include marketing activities, employee training, and after-sales services. These follow-on activities can be critical for the success of an innovation, but they are not included in the definition of an innovation activity.
Framework conditions	Broader set of contextual factors related to the external environment that facilitate or hinder business activities in a given country. These usually include the regulatory environment, taxation, competition, product and labour markets, institutions, human capital, infrastructure, standards, etc.

Full-time equivalent (FTE)	Full-time equivalent (FTE) is the ratio of working hours actually spent on an activity during a specific reference period (usually a calendar year) divided by the total number of hours conventionally worked in the same period.
General government (sector)	General government consists of institutional units that, in addition to meeting their political and regulatory responsibilities, redistribute income and wealth and produce services and goods for individual or collective consumption, mainly on a non-market basis. The General government sector also includes non-profit institutions controlled by the government.
Global value chains	Pattern of organisation of production involving international trade and investment flows whereby the different stages of the production process are located across different countries.
Goods	Goods are physical, produced objects for which a demand exists, over which ownership rights can be established and whose ownership can be transferred from one institutional unit to another by engaging in transactions on markets. See also <i>Products</i> .
Government support programmes	Government support programmes represent direct or indirect transfers of resources to firms. Support can be of a financial nature or may be provided in kind. This support may come directly from government authorities or indirectly, for example when consumers are subsidised to purchase specific products. Innovation-related activities and outcomes are common targets of government support.
Households	Households are institutional units consisting of one or more individuals. In the System of National Accounts, individuals must belong to only one household. The principal functions of households are to supply labour, to undertake final consumption and, as entrepreneurs, to produce market goods and services.
Implementation	Implementation refers to the point in time when a significantly different new or improved product or business process is first made available for use. In the case of product innovation, this refers to its market introduction, while for business process innovations it relates to their first use within the firm.
Imputation	Imputation is a post-survey adjustment method for dealing with item non-response. A replacement value is assigned for specific data items where the response is missing or unusable. Various methods can be used for imputation including mean value, hot-/cold-deck, nearest-neighbour techniques and regression. See also <i>Item non-response</i> .
Informal sector (or economy)	The informal sector is broadly characterised as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale.
Indicator	An indicator is a variable that purports to represent the performance of different units along some dimension. Its value is generated through a process that simplifies raw data about complex phenomena in order to compare similar units of analysis across time or location. See also <i>Innovation indicator</i> .
Industry	An industry consists of a group of establishments engaged in the same, or similar, kinds of activity. See also <i>ISIC</i> .
Innovation	An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).

Innovation-active firm	An innovation-active firm is engaged at some time during the observation period in one or more activities to develop or implement new or improved products or business processes for an intended use. Both innovative and non-innovative firms can be innovation-active during an observation period. See also <i>Innovation status</i> .
Innovation activities	Institutional units can undertake a series of actions with the intention to develop innovations. This can require dedicated resources and engagement in specific activities, including policies, processes and procedures. See also <i>Innovation activities (business)</i> .
Innovation activities (business)	<p>Business innovation activities include all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm. They include:</p> <ul style="list-style-type: none"> • research and experimental development (R&D) activities • engineering, design and other creative work activities • marketing and brand equity activities • intellectual property (IP) related activities • employee training activities • software development and database activities • activities related to the acquisition or lease of tangible assets • innovation management activities. <p>Innovation activities can result in an innovation, be ongoing, postponed or abandoned.</p>
Innovation barriers and drivers	Internal or external factors that hamper or incentivise business innovation efforts. Depending on the context, an external factor can act as a driver of innovation or as a barrier to innovation.
Innovation expenditure (business)	Economic cost of innovation activities undertaken by a firm or group of firms. Expenditure can be intramural (activities carried out in-house) or extramural (carried out by third parties on behalf of the firm). See also <i>Innovation activities (business)</i> .
Innovation indicator	An innovation indicator is a statistical summary measure of an innovation phenomenon (activity, output, expenditure, etc.) observed in a population or a sample thereof for a specified time or place. Indicators are usually corrected (or standardised) to permit comparisons across units that differ in size or other characteristics. See also <i>Indicator</i> .
Innovation management	Innovation management includes all systematic activities to plan, govern and control internal and external resources for innovation. This includes how resources for innovation are allocated, the organisation of responsibilities and decision-making among employees, the management of collaboration with external partners, the integration of external inputs into a firm's innovation activities, and activities to monitor the results of innovation and to support learning from experience.
Innovation objectives	Innovation objectives consist of a firm's identifiable goals that reflect its motives and underlying strategies with respect to its innovation efforts. The objectives can concern the characteristics of the innovation itself, such as its specifications, or its market and economic objectives.
Innovation outcomes	Innovation outcomes are the observed effects of innovations, including the extent to which a firm's objectives are met and the broader effects of innovation on other organisations, the economy, society, and the environment. These can also include unexpected effects that were not identified among the firm's initial objectives (e.g. spillovers and other externalities).

Innovation project	An innovation project is a set of activities that are organised and managed for a specific purpose and with their own objectives, resources and expected outcomes. Information on innovation projects can complement other qualitative and quantitative data on innovation activities.
Innovation sales share	The innovation sales share indicator is the share of a firm's total sales in the reference year that is due to product innovations. It is an indicator of the economic significance of product innovations at the level of the innovative firm.
Innovation status	The innovation status of a firm is defined on the basis of its engagement in innovation activities and its introduction of one or more innovations over the observation period of a data collection exercise. See also <i>Innovative firm and Innovation-active firm</i> .
Innovative firm	An innovative firm reports one or more innovations within the observation period. This applies equally to a firm that is individually or jointly responsible for an innovation. The term "innovative" is only used in the manual in this context. See also <i>Innovation status</i> .
Institutional unit	An institutional unit is defined in the System of National Accounts as "an economic entity that is capable, in its own right, of owning assets, incurring liabilities, and engaging in economic activities and transactions with other entities." Institutional units can undertake a series of actions with the intention to develop innovations.
Intangible assets	See <i>Knowledge-based capital</i> .
Intellectual property (IP)	Intellectual property (IP) refers to creations of the mind such as inventions; literary and artistic works; and symbols, names and images used in commerce. See also <i>Intellectual property rights</i> .
Intellectual property (IP) related activities	Intellectual property (IP) related activities include the protection or exploitation of knowledge, often created through research and experimental development (R&D), software development, and engineering, design and other creative work. IP activities include all administrative and legal work to apply for, register, document, manage, trade, license-out, market and enforce a firm's own intellectual property rights (IPRs), all activities to acquire IPRs from other organisations such as through licensing-in or the outright purchase of IP, and activities to sell IP to third parties. IP activities for ideas, inventions and new or improved products or business processes developed during the observation period are innovation activities. See also <i>Intellectual property and Intellectual property rights</i> .
Intellectual property products (IPPs)	Intellectual property products (IPPs) are the result of research, development, investigation or innovation leading to knowledge that the developers can market or use to their own benefit in production because use of the knowledge is restricted by means of legal or other protection. They include: <ul style="list-style-type: none"> • research and experimental development (R&D) • mineral exploration and evaluation • computer software and databases • entertainment, literary and artistic originals; and other IPPs.
Intellectual property rights (IPRs)	Intellectual property rights (IPRs) are legal rights over intellectual property. See also <i>Intellectual property</i> .

International Standard Industrial Classification of All Economic Activities (ISIC)	The International Standard Industrial Classification of All Economic Activities (ISIC) consist of coherent and consistent classification structure of economic activities based on a set of internationally agreed concepts, definitions, principles and classification rules. It provides a comprehensive framework within which economic data can be collected and reported in a format that is designed for purposes of economic analysis, decision-taking and policy-making. The scope of ISIC in general covers productive activities, i.e. economic activities within the production boundary of the System of National Accounts (SNA). The classification is used to classify statistical units, such as establishments or enterprises, according to the economic activity in which they mainly engage. The most recent version is ISIC Revision 4.
Intramural R&D	Intramural research and experimental development (R&D) expenditures are all current expenditures plus gross fixed capital expenditures for R&D performed within a statistical unit. Intramural R&D is an innovation activity alongside extramural R&D. See also <i>Extramural R&D</i> .
ISO 50500	International Organization for Standardization (ISO) standards on innovation management fundamentals and vocabulary developed by the ISO/TC 279 Technical Committee. The definitions of innovation and innovation management in the <i>Oslo Manual</i> are aligned with those used by ISO.
Item non-response	When a sampled unit responds to a questionnaire incompletely.
Kind-of-activity unit (KAU)	A kind-of-activity unit (KAU) is an enterprise, or a part of an enterprise, that engages in only one kind of productive activity or in which the principal productive activity accounts for most of the value added. See also <i>Enterprise</i> .
Knowledge	Knowledge refers to an understanding of information and the ability to use information for different purposes.
Knowledge-based capital (KBC)	Knowledge-based capital (KBC) comprises intangible assets that create future benefits. It comprises software and databases, Intellectual property products, and economic competencies (including brand equity, firm-specific human capital, organisational capital). Software, databases and intellectual property products are currently recognised by the System of National Accounts as produced assets. See also <i>Intellectual property products</i> .
Knowledge-capturing products	Knowledge-capturing products concern the provision, storage, communication and dissemination of information, advice and entertainment in such a way that the consuming unit can access the knowledge repeatedly.
Knowledge flows	Knowledge flows refer to inbound and outbound exchanges of knowledge, through market transactions as well as non-market means. Knowledge flows encompass both deliberate and accidental transmission of knowledge.
Knowledge management	Knowledge management is the co-ordination of all activities by an organisation to direct, control, capture, use, and share knowledge within and outside its boundaries.
Knowledge network	A knowledge network consists of the knowledge-based interactions or linkages shared by a group of firms and possibly other actors. It includes knowledge elements, repositories and agents that search for, transmit and create knowledge. These are interconnected by relationships that enable, shape or constrain the acquisition, transfer and creation of knowledge. Knowledge networks contain two main components: the type of knowledge and the actors that receive, supply or exchange knowledge.
Logic model	A logic model is a tool used by funders, managers, and evaluators of programmes to represent the sequence of impacts and evaluate the effectiveness of a programme.
Longitudinal survey	A longitudinal survey collects data on the same units (panel) over multiple time periods.

Management capabilities	Management capabilities can influence a firm's ability to undertake innovation activities, introduce innovations and generate innovation outcomes. For the purpose of innovation, two key areas are considered: (i) a firm's competitive strategy; and (ii) the organisational and managerial capabilities used to implement this strategy. See also <i>Managerial capabilities</i> .
Managerial capabilities	Managerial capabilities include all of a firm's internal abilities, capacities, and competences that can be used to mobilise, command and exploit resources in order to meet the firm's strategic goals. These capabilities typically relate to managing people; intangible, physical and financial capital; and knowledge. Capabilities concern both internal processes and external relations. Managerial capabilities are a specific subset of organisational capabilities that relate to the ability of managers to organise change. See also <i>Management capabilities</i> .
Marketing and brand equity activities	Marketing and brand equity activities include market research and 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. Marketing activities for existing products are only innovation activities if the marketing practice is itself an innovation.
Marketing innovation	Type of innovations used in the previous edition of this Manual, currently these are mostly subsumed under business process innovation, except for innovations in product design which are included under product innovation.
Metadata	Metadata are data that define and describe other data. This includes including information on the procedure used to collect data, sampling methods, procedures for dealing with non-response, and quality indicators.
Moments (statistical)	Statistical indicators providing information on the shape of the distribution of a database. Examples include the mean and the variance.
Multinational enterprise (MNE)	A multinational enterprise (MNE) refers to a parent company resident in a country and its majority-owned affiliates located abroad, which are labelled controlled affiliates abroad. MNEs are also referred to as global enterprise groups. See also <i>Enterprise group</i> .
New-to-firm (NTF) innovation	Lowest threshold for innovation in terms of novelty referring to a first time use or implementation by a firm. A new-to-firm (NTF) innovation can also be new-to-market (NTM) (or world), but not vice versa. If an innovation is NTF but not NTM (e.g. when adopting existing products or business processes – as long as they differ significantly from what the firm offered or used previously – with little or no modification), it is referred to as "NTF only". See also <i>New-to-market innovation</i> .
New-to-market (NTM) innovation	An innovation by a firm that has not been available in the market(s) served by the firm. New-to-market innovation represent a higher threshold for innovation than a new-to-firm innovation in terms of novelty. See also <i>New-to-firm innovation</i> .
Nominal variable	Categorical variable with no intrinsic ordering. See also <i>Ordinal variable</i> .
Non-innovative firm	A non-innovative firm is one that does not report an innovation within the observation period. A non-innovative firm can still be innovation-active if it had one or more ongoing, suspended, abandoned or completed innovation activities that did not result in an innovation during the observation period. See also <i>Innovative firm</i> .
Non-profit institution (NPI)	Non-profit institutions (NPIs) are legal or social entities created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them. They can be engaged in market or non-market production.

Non-profit institutions serving households (NPISHs)	Non-profit institutions serving households (NPISHs) are legal entities that are principally engaged in the production of non-market services for households or the community at large and whose main resource is from voluntary contributions. If controlled by government, they are part of the General government sector. If controlled by firms, they are assigned to the Business enterprise sector. See also <i>Non-profit institution</i> .
Non-response survey	A non-response survey is a survey aimed to identify likely significant differences between responding and non-responding units and to obtain information on why non-responding units did not answer. See also <i>Unit non-response</i> ,
Novelty	Novelty is a dimension used to assess whether a product or business process is “significantly different” from previous ones and if so, it could be considered an innovation. The first and most widely used approach to determine the novelty of a firm’s innovations is to compare these with the state of the art in the market or industry in which the firm operates. The second option is to assess the potential for an innovation to transform (or create) a market, which can provide a possible indicator for the incidence of radical or disruptive innovation. A final option for product innovations is to measure the observed change in sales over the observation period or by asking directly about future expectations of the effect of these innovations on competitiveness.
Object-based approach	The object approach to innovation measurement collects data on a single, focal innovation (the object of the study). See also <i>Subject-based approach</i> .
Observation period	The observation period is the length of time covered by a question in a survey. See also <i>Reference period</i> .
Open innovation	Open innovation denotes the flow of innovation-relevant knowledge across the boundaries of individual organisations. This notion of “openness” does not necessarily imply that knowledge is free of charge or exempt from use restrictions.
Ordinal variable	An ordinal variable is a categorical variable for which the values are ordered. See also <i>Nominal variable</i> .
Organisational capabilities	See <i>Managerial capabilities</i> .
Organisational innovation	Type of innovation used in the previous edition of this Manual, currently subsumed under business process innovation.
Panel	A panel is the subset of units that are repeatedly sampled over two or more iterations of a longitudinal survey. See also <i>Longitudinal survey</i> .
Paradata	Paradata refers to the data about the process by which surveys are filled in. Paradata can be analysed to identify best practices that minimise undesirable respondent behaviour such as premature termination or satisficing, in order to improve future iterations of the survey instrument.
Product	A product is a good or service (including knowledge-capturing products as well as combinations of goods and services) that results from a process of production. See also <i>Goods and Services</i> .
Product innovation	A product innovation is a new or improved good or service that differs significantly from the firm’s previous goods or services and that has been introduced on the market. Product innovations must provide significant improvements to one or more characteristics or performance specifications. See also <i>Product</i> .
Production processes	Production processes (or production activities) are defined in the System of National Accounts as all activities, under the control of an institutional unit, that use inputs of labour, capital, goods and services to produce outputs of goods and services. These activities are the focus of innovation analysis.

Public sector	The public sector includes all institutions controlled by government, including public business enterprises. The latter should not be confused with publicly listed (and traded) corporations. The public sector is a broader concept than the General government sector.
Public infrastructure	Public infrastructure can be defined by government ownership or by government control through direct regulation. The technical and economic characteristics of public infrastructure strongly influence the functional capabilities, development and performance of an economy, hence the inclusion of public infrastructure as an external factor that can influence innovation. Public infrastructure includes areas such as transport, energy, information and communication technology, waste management, water supply, knowledge infrastructure, and health.
Public research institution (PRI)	Although there is no formal definition of a public research institution (PRI) (sometimes also referred to as a public research organisation), it must meet two criteria: (i) it performs research and experimental development as a primary economic activity (research); and (ii) it is controlled by government. Private non-profit research institutes are therefore excluded.
Reference period	The reference period is the final year of the overall survey observation period and is used as the effective observation period for collecting interval level data items, such as expenditures or the number of employed persons. See also <i>Observation period</i> .
Regulation	Regulation refers to the implementation of rules by public authorities and governmental bodies to influence market activity and the behaviour of private actors in the economy. A wide variety of regulations can affect the innovation activities of firms, industries and economies.
Reporting unit	The reporting unit refers to the “level” within the business from which the required data are collected. The reporting unit may differ from the required statistical unit.
Research and experimental development (R&D)	Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.
Sampling fraction	The sampling fraction is the ratio of the sample size to the population size.
Satisficing	Satisficing refers to respondent behaviours to reduce the time and effort required to complete an online or printed questionnaire. These include abandoning the survey before it is completed (premature termination), skipping questions, non-differentiation (when respondents give the identical response category to all sub-questions in a question, for example answering “slightly important” to all sub-questions in a grid question), and speeding through the questionnaire.
Services	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. See also <i>Products</i> .
Social innovation	Innovations defined by their (social) objectives to improve the welfare of individuals or communities.
Software development and database activities	Software development and database activities include: <ul style="list-style-type: none"> • The in-house development and purchase of computer software, programme descriptions and supporting materials for both systems and applications software (including standard software packages, customised software solutions and software embedded in products or equipment). • The acquisition, in-house development and analysis of computer databases and other computerised information, including the collection and analysis of data in proprietary computer databases and data obtained from publicly available reports or the Internet.

	<ul style="list-style-type: none"> • Activities to upgrade or expand the functions of information technology systems, including computer programmes and databases. This includes statistical data analysis and data mining activities. <p>Software development is an innovation activity when used to develop new or improved business processes or products, such as computer games, logistical systems, or software to integrate business processes. Database activities are an innovation activity when used for innovation, such as analyses of data on the properties of materials or customer preferences.</p>
Standards	Document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.
Statistical unit	A statistical unit is an entity about which information is sought and for which statistics are ultimately compiled; in other words, it is the institutional unit of interest for the intended purpose of collecting innovation statistics. A statistical unit can be an <i>observation unit</i> for which information is received and statistics are compiled, or an <i>analytical unit</i> which is created by splitting or combining observation units with the help of estimations or imputations in order to supply more detailed or homogeneous data than would otherwise be possible.
Stratified sample	A stratified sample is a sample selected from a population which has been divided into separate groups (“strata”) to control the representation of key sub-populations. Separate samples are drawn from each stratum and the target sample size for each will depend on precision criteria, as well as on the number of units, the size of the units and the variability of the main variables of interest within each stratum.
Subject-based approach	The subject approach focuses on the firm (the subject) and collects data on all its innovation activities. See also <i>Object-based approach</i> .
Success of innovations	Success of innovations refer to economic returns generated by the commercialisation or the internal use of innovations. The definition of business innovation does not require an innovation to be a commercial, financial or strategic success at the time of measurement. A product innovation can fail commercially or a business process innovation may require more time to meet its objectives.
Suppliers	Suppliers are firms or organisations that supply goods (equipment, materials, software, components etc.) or services (consulting, business services, etc.) to other firms or organisations. This includes providers of knowledge-capturing products such as intellectual property rights.
Survey frame	The frame population is the set of target population members that has a chance to be selected into the survey sample.
System of National Accounts (SNA)	The System of National Accounts (SNA) is a statistical framework that provides a comprehensive, consistent and flexible set of macroeconomic accounts for policymaking, analysis and research purposes. The most recent version is the 2008 SNA.
Tangible assets	See <i>Activities related to the acquisition or lease of tangible assets</i> .
Technological capabilities	Technological capabilities include knowledge about technologies and how to use them, including the ability to advance technologies beyond the state of the art. Technological capabilities include (i) technical expertise; (ii) design capabilities; and (iii) capabilities for the use of digital technologies and data analytics. See also <i>Technology</i> .

Technical expertise	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 intellectual property. See also <i>Technology</i> .
Technology	Technology refers to the state of knowledge on how to convert resources into outputs. This includes the practical use and application to business processes or products of technical methods, systems, devices, skills and practices.
Training	See <i>Employee training activities</i> .
Unit non-response	When a sampled unit that is contacted does not respond to a survey.
User innovation	User innovation refers to activities whereby consumers or end-users modify a firm's products, with or without the firm's consent, or when users develop entirely new products.
Value creation	The existence of opportunity costs implies the likely intention to pursue some form of value creation (or value preservation) by the actors responsible for an innovation activity. Value is therefore an implicit goal of innovation, but cannot be guaranteed on an <i>ex ante</i> basis. The realisation of the value of an innovation is uncertain and can only be fully assessed sometime after its implementation. The value of an innovation can also evolve over time and provide different types of benefits to different stakeholders.



From:

Oslo Manual 2018

Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition

Access the complete publication at:

<https://doi.org/10.1787/9789264304604-en>

Please cite this chapter as:

OECD/Eurostat (2019), "Glossary of terms", in *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition*, OECD Publishing, Paris/Eurostat, Luxembourg.

DOI: <https://doi.org/10.1787/9789264304604-15-en>

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