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PUBLIC SERVICE MONITORING SYSTEM

General Concept

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KEY DEFINITIONS

- Form of public service provision – a set of actions constituting the provision of a public service and their legal organisation;
- Data keeper – an entity authorised to make the data available;
- PSMS stakeholders – all parties participating in public service provision or interested in providing such a service, i.e. an entity responsible for ensuring the service, a service provider and a recipient, as well as entities collecting, processing and providing information related to the service provision and entities receiving such information;
- Information gap – the situation where there are no statistical information describing the phenomena or processes of importance for public service monitoring;
- Metadata – structured information describing the data, their attributes or objects; they support evaluation design and implementation, facilitate access to data and enable their correct interpretation.
- Service area (SA) – a group of public services linked by their object;
- Public service recipient – an individual or an entity entitled to use the service;
- Entity responsible for ensuring a public service – a public authority responsible for ensuring a public service;
- Object of the service – a tangible or intangible product delivered as part of service provision, a single outcome of the service provision;
- PSMS – Public Service Monitoring System (the final name of the system will be defined at the stage of preparing a detailed system concept);
- Public service (PS) – activity comprising the provision of tangible and intangible goods for which public authorities are responsible;
- Service provider – an entity providing services to recipients;
- Public authorities – central and local administration units;
- Indicator – a quantitative measure derived from a series of observations which presents the position in time and space; measured at regular intervals. In the context of policy analyses, indicators serve to identify the trends and highlight individual issues. They may also be helpful to define the priorities of the policies, monitor the activities and make comparisons. An indicator may be a relation between two or more variables that are logically linked with each other;
- Dimensions of public service description – categories of features allowing to measure the provision of public services in terms of their quantity, quality, availability and cost-effectiveness;
- Variable – a statistical feature taking into account various cross sections, typologies, periods, etc.;
- Data source – official registers and information systems of public administration, non-administration information systems, as well as other available data sets;
- Input source – a source of data from which data are obtained for the needs of the monitoring system.

SYNTHESIS

Ensuring universal and equal access to public services of appropriate quality is **one of the main duties of the state towards its citizens**. For many years, the provision of such services in Poland has been largely the domain of local government units (LGU) which are the largest public service provider and investor in this area. Quality, availability and effectiveness of public services determine the living conditions and business activity in a given area, and at the same time affect the way in which citizens, entrepreneurs, academic and expert community assess the functioning of public administration.

Public services, although commonly recognised as being of key importance, **are currently difficult to monitor** due to the lack of service provision standards and the lack of access to relevant data. The existing database systems do not fulfil the current needs in this regard. This creates difficulties for citizens and entrepreneurs and results in a situation where key decisions on public services may be made by the authorities intuitively, under pressure from current factors, without an in-depth analysis. Therefore, the **need to build a comprehensive and universal system for public service monitoring was recognised** several years ago already. The need to build such system was confirmed in the most important national strategic and programme documents, most recently in the *Responsible Development Strategy until 2020 (with perspective until 2030)* adopted by the government in February 2017.

The Public Service Monitoring System - General Concept is the outcome of works conducted by a group of experts from partner institutions – the Ministry of the Interior and Administration, the Central Statistical Office, the Association of Polish Cities, the Association of Polish Poviats and the Silesian Union of Gminas and Poviats. It closes the first stage of the project to be implemented in the years 2017-2018 and determines the actions for the second stage which is dedicated to designing the System. The adopted procedures provide a unique opportunity to develop the concept of a cohesive and effective system for monitoring of public service delivery.

The objective of developing the Public Service Monitoring System is to optimize the provided services based on high quality data, obtained by integration of numerous dispersed sources. The main objective of the Project, by the end of 2018, is to create the concept of the Public Service Monitoring System. The context of implementation and the objectives of the system are presented in Part 1 and 2 of the document.

The concept of the System assumes that it will enable access to data and allow for comparisons of public service provision through benchmarking for local government units with similar characteristics. **The system will be addressed to both providers and recipients of public services**. The system is to be used by entrepreneurs, public administration, society, citizen organisations, as well as researchers and experts (description of target groups is presented in Part 3 of the document). The system may also contribute to improving the management principles in public administration and may initiate legal changes in the area of operation of entities responsible for providing public services.

In line with the provisions of the Operational Programme Knowledge Education Development (OP KED) 2014-2020 the monitoring under the System will cover: **local taxes and fees, real estate management, road building and transport, environmental protection, investment and construction, geodesy and cartography**. The above areas were selected due to their importance for conducting business activity and for entrepreneurship development in broader terms. According to the experts developing the concept of the System, it should be designed to cover also other, very important, areas of public services, namely, **education, health care or social assistance**. The target list of public service areas to be covered by the System will be compiled in the course of further work.

The methodological concept of the planned System provides for the analysis of four basic dimensions of public service description – **quantity, quality, availability and cost-effectiveness**. Each dimension will have assigned indicators to measure, analyse and interpret it. The system will be designed in several stages, starting from definition of service areas, selection of services for analysis, and analysis of needs and data sources, coupled with the selection of indicators. These activities are elements of subsequent tasks provided for under the project between May 2017 and September 2018.

At the stage of creating the general concept of the PSMS, borderlines between the monitored thematic areas were determined. The part on methodological guidelines presents a **proposed method of indicator selection, requirements for indicator quality and the method of integrating the data sources** in the planned system. The detailed description of the adopted methodological guidelines is presented in Part 4 of the document.

The Public Service Monitoring System will be designed in line with the most recent (at the moment of the concept development) **requirements for public registers and IT systems** defined in the National Interoperability Framework. It will also be designed according to the **national IT security standards**. The EU regulations (General Data Protection Regulation), which are to ensure a coherent level of data protection across the European Union, will also be taken into account. Data integration solutions under the official statistics system will be implemented. Special emphasis will be put on effective data collection and processing. The proposed rules of data integration and IT objectives will be developed in the subsequent months of the project implementation. Their detailed description is presented in Part 5 and 6 of the document.

The project is implemented under Measure 2.18 High quality administrative services of the Operation Programme Knowledge Education Development 2014-2020, co-financed from the European Union funds under the European Social Fund and from the national budget. In the years 2019-2020, the system will be built, the data will be entered into the system and the system will be launched based on the developed concept, while in the years 2021-2022 support will be provided to local government units for using the data to improve the management of services.

The description, links and vision of the further system development are presented in the final parts of the document (7-10). The plans will be implemented within the framework of

non-competition projects under Measure 2.18 of the Operational Programme Knowledge Education Development, as a continuation of the currently implemented project.

1 CONTEXT OF THE PSMS IMPLEMENTATION

In the market economy, the majority of goods and services are provided by private entities and freely traded on the market to satisfy the needs of customers. However, there are some categories of needs that cannot be satisfied based solely on market rules. First of all, there are public goods characterised by non-rival consumption and non-excludability.¹ Due to their non-market nature, these goods must be guaranteed by the state and provided by public institutions established to this end and operating at both central and local government level. At the same time, there is a group of public goods which may be provided on market terms, but it is advisable that the state creates the conditions to enable effective and socially efficient satisfying the related needs. Public services may belong to both these types of goods.

In the narrow sense, public services are related to the category of public goods, while in the wider sense they include all services which are provided in public interest and the provision of which may be influenced by the state through organisational or financial instruments. They include both the services provided directly by public administration and those provided by other entities, but whose financing and quality are the responsibility of public authorities. Ensuring universal and equal access to public services of appropriate quality is one of the main duties of the state and its authorities towards citizens. These issues are reflected in the Constitution of the Republic of Poland², and regulated in detail by “competence” acts, i.e. on gmina government, on powiat government and on voivodship government³, as well as by local law acts.

Quality, efficiency, availability and effectiveness of public service provision determine the overall assessment of the central and local administration functioning by citizens and institutions. They may affect the decisions of entrepreneurs that have an indirect impact on socio-economic development prospects of a given region. Local government units are the largest public service provider and investor in Poland. Each year they spend almost PLN 200 billion, the majority of which is allocated for providing a wide range of public services and for related investments.

In order to perform the above tasks in line with the highest standards and to the satisfaction of final recipients, the central government authorities and local government units must have reliable data allowing to plan and deliver public services (according to the approach stating that public policies should be evidence-based). If such data are lacking, key decisions may be made intuitively, under pressure from current factors.

Decision-making in central and local government units will be supported by a comprehensive and intuitive in use universal public service monitoring system. It will be

¹ Cf. Begg D., Fisher S., Dornbusch R., *Microeconomics*, Warsaw 2003, p. 468.

² Constitution of the Republic of Poland of 2 April 1997 (Dz.U. [Journal of Laws] 1997 No 78, item 483, as amended).

³ Act of 8 March 1990 on gmina government (uniform text Dz.U. 2016 item 446); Act of 5 June 1998 on powiat government (uniform text Dz.U. 2016 item 814) and Act of 5 June 1998 on voivodship government (uniform text Dz.U. 2016 item 486).

available to all citizens, entities and institutions, as well as local government units (which are to a large extent responsible for provision of public services in their areas), and will allow to make comparisons and conduct analysis. The system will also serve to create appropriate conditions for improving the process of public service provision by bodies responsible for supervising the functioning of local government.

Until now there has been no coherent public service monitoring system in Poland which would allow all stakeholders to obtain complete information about the quantity, quality, availability and cost-effectiveness of public services. Entities responsible for providing public services do not have access to a tool which would provide information necessary to make decisions and measure their effects, and to make comparisons to improve the quality of services. National databases: Local Data Bank⁴, Strateg⁵ (developed and operated by the Central Statistical Office), Local Government Analysis System⁶ (operated by the Association of Polish Cities in cooperation with the Association of Polish Poviats and the Union of Rural Gminas of the Republic of Poland), regular benchmarking (coordinated by the Silesian Union of Gminas and Poviats⁷) and “Moja Polis” (“My Polis”) website⁸ and “Nasza Kasa” (“Our money”) website app⁹ (made available by the Klon/Jawor Association) include a limited scope of information and indicators monitoring public services. Some of these databases do not cover all local government units and data are entered at various intervals.

In view of the above, in 2014 the Ministry of the Interior and Administration (at that time the Ministry of Administration and Digitisation) initiated a dialogue with associations representing local government units in Poland, the Central Statistical Office (GUS) and the Ministry of Economic Development (at that time the Ministry of Infrastructure and Development), which eventually resulted in the introduction of a multi-stage project of the public service monitoring system into the framework of the Operational Programme Knowledge Education Development.

A number of non-legal limitations which hamper the functioning of the comprehensive system were identified at the stage of conceptual work. They include:

- the lack of agreed and stakeholder-accepted coherent method of public service description, including the lack of the set of indicators allowing to characterise the services in various dimensions, which does not allow to perform a reliable analysis of these services or identify information gaps that should be identified and filled out as part of the process of creating a monitoring system fulfilling the information needs of stakeholders;
- incomplete data on public services in state information systems, which is a barrier for full characteristics and evaluation of public services of importance for stakeholders;

⁴ bdl.stat.gov.pl

⁵ strateg.stat.gov.pl

⁶ www.systemanaliz.pl

⁷ benchmarking.silesia.org.pl

⁸ www.mojapolis.pl

⁹ www.nszakasa.org.pl/gmina/polska

- difficulties in access to and use of administrative data collected by i.a. ministries and government agencies, which hampers efficient and comprehensive provision of information about public services.

The project provides a unique opportunity to develop the concept of a cohesive, effective and universal system for public service monitoring which would include the methods to reduce the above limitations. It will not only provide access to knowledge about public services and their spatial differentiation, but may also (directly or indirectly) contribute to other positive developments, such as:

- compliance with the constitutional principle of universal access to public information on implementation of public tasks and implementation of provisions on reuse of public sector information;
- change in organisation of some data collection, coupled with the reduction of the burden on respondents;
- improvement of management principles in public administration;
- initiation of legal changes in the area of provided public services.

Actions under the project require close cooperation at the local and national level, in particular between the Central Statistical Office, other central government administration units (ministries and agencies), representatives of local government units, local government associations and supporting research and education institutions. To this end, the project must be coordinated at the strategic level with the participation of the minister competent for public administration, which will allow to harmonise the activities of a wide range of entities and institutions interested in monitoring of public services. This will allow to extend the scope of data entered into the monitoring system to include previously unused sources.

2 OBJECTIVES OF PSMS

One of the main obligations of public administration is to ensure appropriate provision of public services. Access to information useful for management is one of requirements for fulfilment of this obligation.

Integrated, high quality data will allow to optimize the process of their provision which is the main objective of the public service monitoring system. Its attainment shall be possible thanks to the development of a comprehensive, publicly available system, which shall become a tool for local government units to manage services on the basis of benchmarking mechanisms and identification and application of good practices. For citizens and entrepreneurs, it shall be a source of easily accessible information on public services provided in the area of an individual local government unit.

The activities leading to establishing of the public service monitoring system have been divided into three operational stages: **development of the concept of the Public Service Monitoring System, building of the System and further development and promotion of the System.**

The project *Public Service Monitoring System – PSMS concept*, which shall be implemented between 1 January 2017 and 31 December 2018, is the first stage of realisation of the public service monitoring system and will cover all local government units.

As a result of its implementation, a concept, including the following components, shall be developed:

- target scope of areas and public services covered by PSMS;
- a set of indicators, principles for their calculation and interpretation;
- data sources, covering results of official statistics research and data from -non-statistical sources, as well as an effective system for continuous data supply;
- development objectives of the System, including requirements related to necessary IT tools and programming and user interface design together with the its functional requirement specification;
- assumptions for construction of repository of good practices.

PSMS shall primary be an analytical tool, facilitating - at a level of a given local authority - a comprehensive analysis of the situation in the area of provision of a selected service or group of services (quantity, quality, availability and cost effectiveness). Success of such approach shall be measured by the capacity of the system to grasp and balance all relevant aspects of the manner of satisfying of a specific local need and to show parameters of an investigated service over time and against a background of a comparable group of local government units.

The possibility to use aggregated information to analyse results of public service provision at the national level shall be an added value, rather than the primary reason for developing of the system.

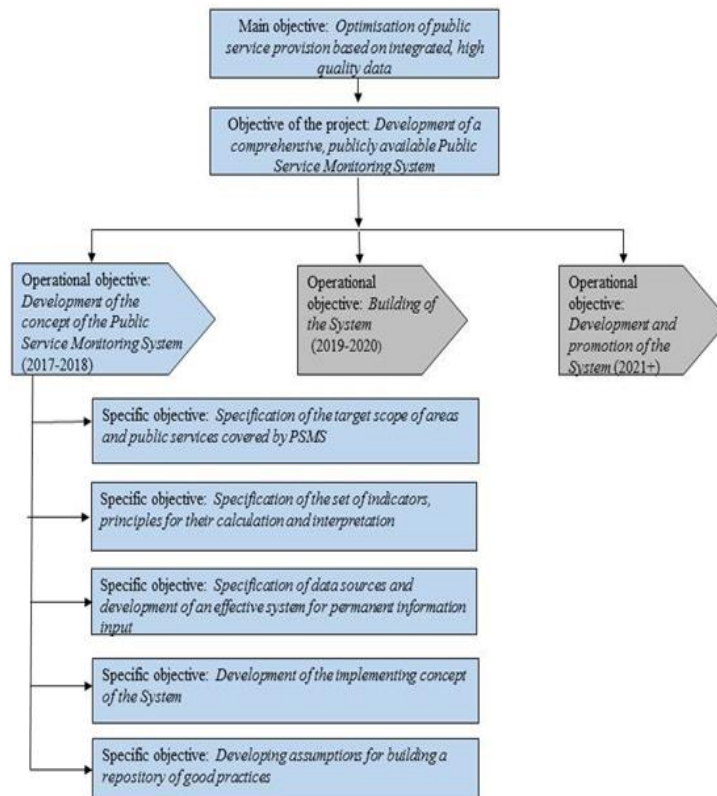


Figure 1 The objectives of development of the Public Service Monitoring System

3 TARGET GROUPS

The characteristics of target groups of the project is based on two primary pillars, on one hand these are public service providers, on the other their recipients and person and institutions, which need reliable knowledge on services provided and their level to achieve their economic or personal goals. It should be emphasised that with such assumption, the project may constitute a knowledge base for a variety of entities.

The objectives of the project determine target groups of PSMS, which include entrepreneurs, administration, the public and civic organizations, scientific and expert communities.

3.1 ENTREPRENEURS

From the point of view of entrepreneurs, the decision on location may be crucial for their business operations. Availability and quality of public services could be a factor motivating to start or expand operations, and as a consequence contribute to development of a given area. The possibility to carry out in-depth analysis of location could also have a significant impact on increasing Poland's investment attractiveness and competitiveness. Presently there is no comprehensive tool that would provide this type of information. PSMS, thanks to effective and fast comparison of public and legal burdens and availability of services, shall facilitate adequate analysis of opportunities and burdens on the part of a business operator. The system, regularly fed with data relevant to the needs and verified in terms of quality, shall allow entrepreneurs to define present position and development opportunities in a given location.

3.2 PUBLIC ADMINISTRATION

This target group includes central and local government administration institutions responsible for provision of public services or supervising their provision. These entities shall on one hand be the sources of data feeding the system, on the other though - the recipients of information processed and made available by PSMS. Being provided with data on public services shall allow public administration bodies (local government units in particular) to quickly identify strengths and weaknesses of delivery of their tasks. Thus, PSMS may contribute to achievement of optimum results of efforts of service providers. PSMS users shall also be able to use the system to compare results achieved by different entities providing the same type of services. This shall facilitate identification and promotion of good practices, the source of which shall be local governments achieving the best results.

3.3 THE PUBLIC AND CIVIC ORGANISATIONS

Thanks to launching of PSMS, citizens and organisations representing them shall have access to information describing parameters of public services provided at local and regional levels. Through making the collected data available, PSMS shall facilitate comparisons between individual local government units; thus citizens shall gain substantive arguments, which they shall be able to use in a public debate or to exercise public control over the quality and manner of realisation of public tasks.

3.4 SCIENTIFIC AND EXPERT COMMUNITIES

Development of a tool collecting data on the process of provision of public services shall facilitate the development of research on availability and quality of such services, including an in-depth analysis of reasons of disproportions recorded in this area. This shall contribute to an increase of knowledge in the area of public services for all stakeholders. Results of research efforts could be a substantial support for entities responsible for provision of public services. Outcomes of the efforts of scientific and expert communities could include identification of legal, organisational or technical barriers, as a result of which the process of provision of public services could be improved.

4 METHODOLOGICAL GUIDELINES

4.1 PSMS AS A TOOL TO ANALYSE SERVICES AT THE LOCAL LEVEL

When developing PSMS, information needs of local government units, entrepreneurs and the public have been the starting point. Reliable information on the parameters of services provided facilitates debate and allows to take evidence based decisions, which is in line with the objectives of PSMS.

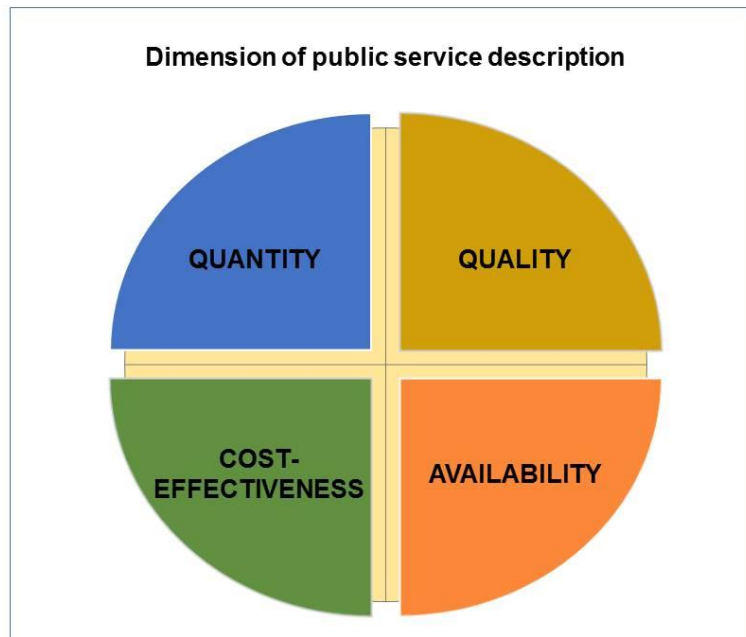


Figure 2 Dimensions of public service description

It has been assumed that the methodology of the analysis shall focus on direct outcomes of the process of provision of a service and shall facilitate its evaluation in terms of effectiveness and availability. This approach results directly from the Act on public finance, which provides: *the unit of the public sector shall manage assets driven by effectiveness of its use and it shall make publicly available the information on a) the scope of tasks and services performed or provided by such unit and the amount of public funds allocated for the implementation, b) principles and conditions of provision of services to entitled entities, c) the principles of payment for services provided*” (cf. Articles 28 and 34 of the Act on public finance).

At the same time it has been assumed that PSMS as such shall not be an evaluation tool, but it shall solely provide information, which users could employ to formulate their own opinions on the situation in a local government unit in the area of selected services.

According to this approach, the objective of PSMS is to provide data facilitating the analysis and to provide information facilitating answering the question “How well do we manage service X?” by authorities of a given local government unit. According to the

assumptions it shall be possible through benchmarking outcomes against the primary dimensions of services: (1) Quantity; (2) Quality; (3) Cost effectiveness; (4) Availability. At the same time, it should be borne in mind that carrying out of such an evaluation and formulation of general conclusions on the level of satisfying needs related to provision of public services in individual units is a particular challenge, as the features indicated above are interdependent, e.g. improving the quality may be connected with increase of the cost, while increasing the quantity or availability of a service may take place at the expense of its quality parameters.

Thus, there is no single configuration of variable describing the expected outcome of service provision, which could be recommended to all local government units. Instead, one should pursue optimisation of the entire system from the point of view of a strategy implemented by a specific local government unit, operating in unique and specific conditions. An evaluation may be formulated primarily at the local level by local authorities and local stakeholders.

4.1.1 The mechanism of analysis of a public service in PSMS

The target procedure for analysis of a public service envisages the operational PSMS to contain information describing outcomes of its provision in all local government units.

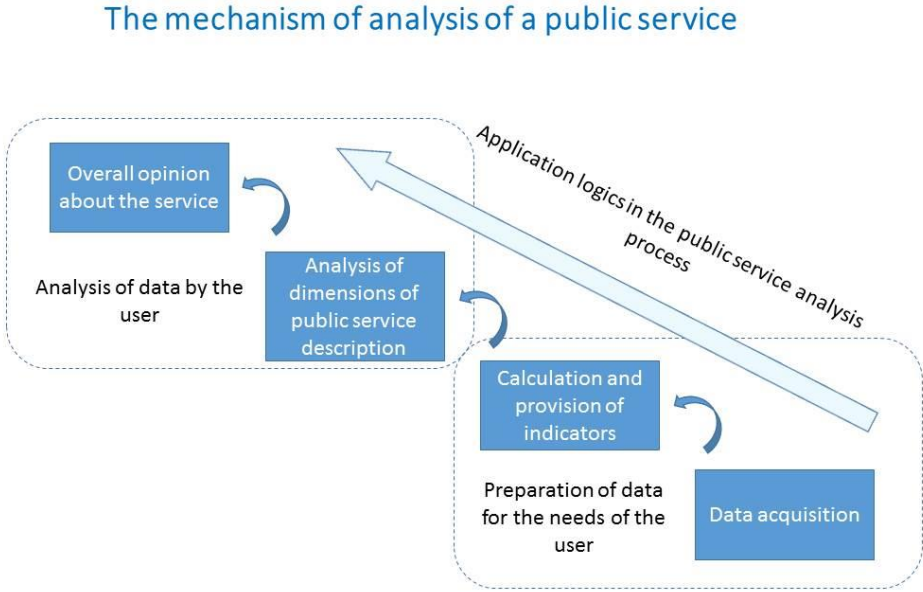


Figure 3 The mechanism of analysis of a public service

The envisaged universality of PSMS requires the system to be effective and not to generate additional reporting burdens on the part of service providers. On one hand, it should

facilitate a comprehensive analysis of a service. On the other - it should focus on collecting only the data, which are really indispensable to achieve this objective.

The condition of fulfilling this assumption is to develop a system based on a considered, consistent concept, which logically combines subsequent levels of drawing conclusions in the target analytic mechanism. The analysis of the basic dimensions of description shall serve as the foundation for PSMS users to formulate a general opinion on the level of provision of service X. Attainment of this objective calls for carefully selected indicators, and before that, data which would facilitate calculation of indicators. It is necessary to obtain variables for their calculation and relevant data sources should be available. Another important item is a plan for collection of missing information, in case information gaps are identified.

The advantage of the proposed approach is targeting and organisation of the process of analysis. It is also important to identify indicators and data, without which the comprehensive description of investigated service is not possible. Furthermore, such identification indirectly implies a question on the expediency of collecting other information. Reasons for their collection should be justified or reduction of unnecessary reporting burden should be considered.

4.1.2 The process of defining PSMS information scope

The further part of the chapter, apart from presenting objectives for PSMS, discusses subsequent steps to be taken in order to design the system in selected thematic areas.

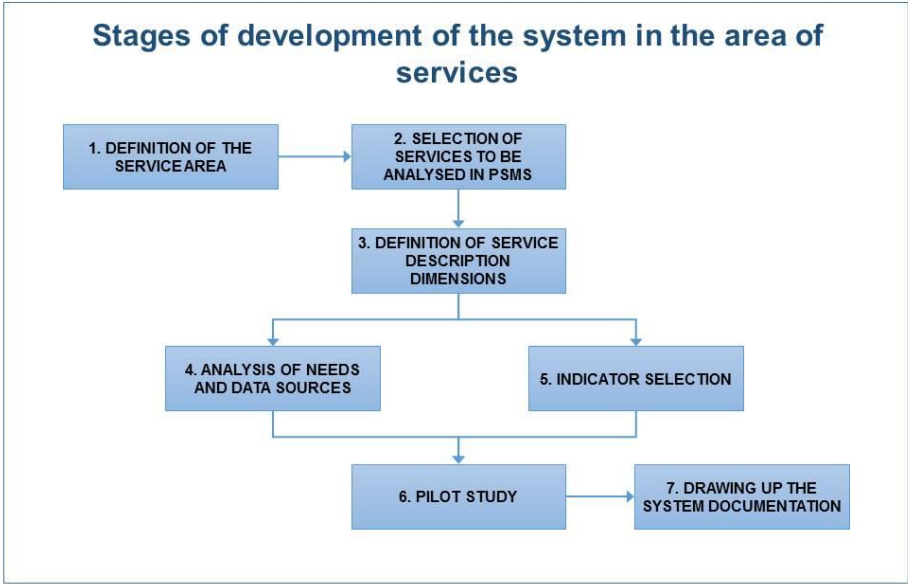


Figure 4 The stages of development of the system in the area of services

This process could be divided into 6 steps:

- 1) Definition of the service area (SA) - Selection and description of SA in the form of a specially drafted fiche. Designation of demarcation lines and discussion of relations between areas.
- 2) Selection of services to be analysed under SA - Identification of public services (PS) provided in the area. Definition of selected services following a template provided in a PS fiche.
- 3) Definition of basic dimensions of a PS description - Interpretation of general categories of “quantity”, “quality”, “cost effectiveness” and “availability” in the context of a selected service. Formulation of assumptions to be met by indicators, for the comprehensive description of an investigated PS to be possible.
- 4) Study of needs of local government units combined with the analysis of availability of data sources at the local level and selection of indicators - these two stages of work shall be carried out in parallel, with the use of tests and the iteration method. Justification of such approach results from direct interconnection of these tasks. On one hand, no data on a service are sought (e.g. because they are collected already), but solely information that shall facilitate calculation of necessary indicators. On the other, when proposing a specific indicator, knowledge should be available on information collected and forms, in which it may be made available.
- 5) Design and pilot implementation of the study mechanism - operationalisation of the research mechanism through designation of tasks and schedules and identification of the forms of data provision. This phase shall verify correct functioning of the mechanism of analysis - from collection of data, through calculation of indicators and their analysis, to formulation of resulting conclusions.
- 6) Drafting of the final version of PSMS documentation in the scope of a selected service (fiches, schedules), taking into account the results of the test carried out.

4.2 SERVICE AREAS

The concept of public service monitoring covers, in line with OP KED provisions, the following initial service areas:

- Local taxes and fees;
- Real estate management;
- Roads and transportation;
- Environment protection;
- Investment and construction;

- Land surveying and cartography.

The so-called initial scope of public service areas indicated above is crucial from the point of view of entrepreneurs doing business, it is also of significance to other target groups of the system.

According to the objectives of the PSMS project, at later stages of work the list is envisaged to be extended to include additional areas, including those related to public services of social nature, This results from the fact that decisions connected to location of new investment projects are often taken with also the so-called soft factors of business environment in mind. These areas include, among others:

- Education;
- Healthcare;
- Social welfare and family support;
- Culture and recreation;
- Public safety and justice.

4.2.1 Criteria for identification of boundaries between scopes of indicated thematic areas

Delimitation of boundaries between thematic areas shall be carried out by an expert method on the basis of analysis of the nature of a given service (i.e. objective analysis supported by legal, organisational, financial and other criteria), on the basis of legal acts defining tasks for local government units and central government administration bodies in the scope of provision of public services in selected areas.

4.2.2 Definition of a service area

Service areas (SA) shall be described in fiches containing:

- 1) The name of a service area;
- 2) Legal basis;
- 3) Objectives of activities of entities responsible for provision of SA in a given territory;
- 4) Characteristics and context of functioning of SA;
- 5) PSMS stakeholders in SA and their information needs;
- 6) Connections with other SA (including demarcation lines);
- 7) Services identified within the area.

4.2.3 Brief characteristics of public service areas - the initial scope

Local taxes and fees

The substantive scope of the area includes general issues related to public receivable of local government units, which are subject to budget uniformity principle. Under this area,

items subject to analysis shall first of all include local taxes and fees, which constitute income of local government budgets, even when an entitled entity has practically no influence over taxes and fees collected.

The area does not include:

- private receivables of local government units, e.g. fees for provision of water or collection of waste, rents for council housing;
- public receivables of local government units, which have the nature of compulsory payment for specific actions in fact provided by public administration;
- public receivables of local government units, which may only be allocated to designated purposes, typically connected with the income source, e.g. fees connected to distribution of alcohol or certain environmental fees and fines.

These shall be analysed under the thematic areas related to objectives/services, for which given incomes are to be allocated or have a direct connection with other thematic areas.

Real estate management

Real estate management covers all activities connected with shaping of the policy in the area of management of real estate assets (land, retail space, housing), both the real estate owned by local government units and real estate owned by the State Treasury managed by local government units. For this reason, in case of this type of services, the delimitation criterion is of subjective nature. In practice, this area shall include two groups of issues:

- management of undeveloped real estate, including sales of real estate and establishment of the right of perpetual use on such property - as a reflection of an investment policy of a given local government unit;
- management of built-up real estate - primarily housing policies implemented by municipalities, including rent policy and commercial space policy.

Roads and transportation

The scope of the area pertains to issues connected with public transport and road infrastructure. In particular, the following issues shall be taken into account:

- management of public roads of individual categories;
- organisation, management, operation and financing of public collective transport in a given territory, both organised directly by relevant local government units (as a public service), and transport provided by commercial operators on market principles following fulfilment of certain administrative requirements.

Environment protection

The description of the conditions of environment components reflects effectiveness and direction of local impact on environment, rational use of its resources and sustainable development of a specific area.

Services related to the condition of environment pertain to its individual components and consist in providing the public with their high quality, at the same time carrying activities to protect these components. Areas of environmental services include:

- air quality protection, care over clean water, protection of agricultural and forest land, protection of natural and landscape values, rational management of solid waste and waste water;
- municipal services of technical nature, i.e. collective water supply, collection and treatment of waste water, collection of municipal solid waste, maintenance of clean and orderly condition, ensuring access to areas with high natural value and ensuring access to green areas and forests.

Issues taken into account shall also include fees for municipal services and expenditure and material outcomes connected with investment in environment protection and water management.

Investment and construction

The scope of this area includes all public services necessary for private investors to prepare and carry out an investment process, in particular activities related to shaping and rational use of space in connection with location of developments, all activities in the area of architectonic and construction administration and construction supervision, as well as creation of appropriate legal and administrative conditions to facilitate investment. This means that the issues analysed under the “investment and construction” area shall include, among others:

- spatial planning;
- private real estate management, primarily procedures for division, re-parcelling, consolidation and setting boundaries of real estate;
- access of individual plots to technical infrastructure, with the exclusion of infrastructure for environment protections (which shall be analysed under the thematic area “Environment protection”).

Land surveying and cartography

This thematic area includes evaluation of accessibility, validity and quality of the state land surveying and cartographic resources. The tasks of land-survey and cartographic services include keeping of the resource, including creation, registering and maintenance, as well as updating and making available of data from the following registers and databases: the state register of primary geodetic, gravimetric and magnetic control networks, land and property register (property cadastre), geodetic register of utility network, the state register of boundaries and area of country’s territorial division units, database of topographic features, database of general geographic features, aerial and satellite images, ortophotomap and digital terrain model.

4.2.4 Brief characteristics of social public service areas

Within the scope of works conducted at Stage 1 of PSMS (2017–2018), identification and methodological works will be carried out with respect to social services, and their final development for the needs of the system will form a part of another stage of works, i.e. the envisaged Project II (2019–2020).

Education

The scope of this area is defined mainly by the fulfilment of local government units' own statutory tasks that include the provision of educational services as part of the public education system.

The objective of public services monitoring in the “Education” area is to allow the users to evaluate their widely understood (spatial, social) availability and effectiveness, as well as to identify their potential impact on the local labour market. As regards the data collection methodology and the education system management and financing method, the provision of public services in this monitoring area will be carried out at the level of the institution providing the service.

Health

The basic objectives of the entities responsible for providing services in this area, which falls within the scope of their competence, include taking broad action related to prevention and public health, seeking to increase the quality of public health services and improve their effectiveness. This area covers such services as: primary health care (POZ), specialist outpatient care (AOS), hospital care, long-term health care, as well as emergency medical services and first aid. Local government units need to play an important role in this system, especially poviats which, since their creation, have been responsible for performing local tasks whose scope exceeds the borders of individual gminas.

The aim of service monitoring in this area is to obtain data on the availability and quality of health services which seem to be most important from the point of view of residents and investors.

Social welfare and family support

The scope of this area covers selected social welfare and family support issues. Social welfare organised by the general and local government administration is aimed at supporting people facing a difficult situation that they are unable to deal with themselves and at supporting their integration with the local environment. Care establishments for children under 3 (nurseries and child clubs) are a form of assistance offered to parents that wish to reconcile their working and family lives. Furthermore, the scope of this area covers also other forms of assistance offered to parents both in public institutions and in private companies.

The objective of services monitoring in this area is to obtain information on the use of various forms of support, as well as the quality and availability of services in a given area.

Culture and recreation

This area covers services offered by numerous entities that vary significantly as regards the variety of forms of their activity in the areas of culture and national heritage, recreation, tourism and sports. The “Culture and recreation” area includes both activities related to the access to culture and sports, and recreational infrastructure, and those that make it possible to participate in culture, active recreation, tourism and sports. The services covered include staged performances, cinema, reading, sports clubs, sports and recreation centres, tourist information, information on tour operators, tourist promotion and other services.

The objective of monitoring services in this area is to obtain qualitative and quantitative data on the status and elements of individual public services components in this area. This applies e.g. to the scale and use of the services offered by institutions functioning in this area, as well as the forms of satisfying the needs of the society that are related to the method of spending spare time and the support provided by local government units to local culture, recreation, tourism and sports services.

Public safety and justice

This area features in particular: the judiciary (courts), services and guards responsible for ensuring the protection of public safety and order (the police, public prosecutor’s office, municipal police), emergency services (e.g. the state and voluntary fire department), crisis management elements (the head of voivodship, poviats, gmina, town/city is in charge of the crisis management), border guards, prison guards and other institutions specialising in the protection of public safety and order.

The monitoring of public services aimed at ensuring public safety is important from the point of view of the society in general. If the entities responsible for ensuring safety function efficiently and effectively, this creates positive framework conditions for business activity and social development of the country. It allows in particular to evaluate the safety level in a given area, e.g. to identify the areas with a lower crime rate, as well as areas that are not at risk of natural disasters (flood, fire), and therefore may contribute to indicating areas which are attractive for business activity. The quality and effectiveness of the public service provided depends to a large extent on the institution that provides it (on its organisation, and the financial and personal background, among other things). It is thus important to monitor both the public safety service as such, and the entities providing a given service.

4.3 PUBLIC SERVICES

All significant public services will be identified within each of the areas. On the basis of the following criteria, the services that will be described under the PSMS will be selected. Each of the services selected will be described in the *public service fiche*, which will cover:

- 1) Service name;

- 2) Identification of the SA where the given PS belongs;
- 3) Service provision purpose;
- 4) Identification of the legal acts which govern the service provision;
- 5) Definition and characteristics of PS, including the operator and organisational/legal form of PS provision as well as relationships with other PSs; reference to the classifications used;
- 6) Identification of the PS stakeholders and specification of the responsible operator, service providers and recipients (target group);
- 7) Basic dimensions of the PS description (quantity, quality, availability and effectiveness) in respect of the specific service and its provision context.

4.3.1 Criteria for selection of services within the area

The basic method for the final selection of services that will be described under PSMS (from among the total public services falling under the given thematic area) will be expert method using the following criteria:

- importance from the point of view of the purpose formulated for the given area;
- relevance in terms of scale of activities and inputs borne for these activities;
- representativeness of the service for the given area (compared to similar services).

Where appropriate, services which do not meet the a.m. criteria but are addressed to the users with special needs and vulnerable persons (such as microentrepreneurs, disabled people, poor persons) shall be taken into account.

Both object-oriented and subject-oriented approach (e.g. what specific goods are provided within the framework of the given service) may be helpful in assessing the importance, relevance and analysis possibilities - both on the side of the operator responsible for a given PS, its providers and receivers (target groups).

4.3.2 Dimensions of public service description

Four basic dimensions of public service description have been assumed: quantity, quality, availability and cost effectiveness. They allow to carry out an overall characterisation of the provision of a given service. Indicators will be allocated to the PS description dimensions. They will make measurement, analysis and result interpretation possible.

Quantity

Quantity criterion will be used to quantify the results of actions undertaken (e.g. kilometres of new roads, number of decisions issued or of cube meters of water delivered).

Quality

Quality criterion describes service parameters. The quality should be quantifiable and should refer to the objective/verifiable service characteristics (e.g. proportion of the administrative decisions repealed, proportion of low-floor buses).

Availability

Depending on the nature of the service under examination, this criterion may be understood as:

- attainability – the relation of supply to demand or needs (e.g. undeveloped building plots per 1000 citizens, percentage of buildings connected to the water supply network, percentage of area covered by local land development plans);
- financial availability – the service cost for the user (e.g. the bus ticket fare, the fees for the segregated waste collection);
- spatial availability – the distance to the place of provision of the service (e.g. the distance between the gmina and the nearest international airport);
- temporal availability – the time spent awaiting the service provision (e.g. average time of issuing the construction permit for a family house, time one has to wait for the specialist medical practitioner appointment, travel time to secondary school);
- architectural availability – if the facility where the service is provided enables access for all authorised users (e.g. low-floor buses, libraries adjusted for persons on wheelchairs);
- information availability – the way in which the information on the service is provided (e.g. possibility to see the local land management plans in the commune's web portal, possibility to pay the real estate tax by the Internet), this dimension include both, the level of service maturity and the implementation of the WCAG 2.0 standard).

Cost-effectiveness

This dimension is to include the relation between the results and the inputs from the government administration and local government units related to the provision of services. These inputs may be calculated jointly with the stakeholders inputs (total unit cost of service).

4.4 IDENTIFICATION, SELECTION AND QUALITY OF INDICATORS

For every public service described in the PSMS, the indicators will be identified according to selected criteria, to measure: quantity, quality, availability and cost-effectiveness, respectively. Every indicator will be described in the *indicator's fiche* including especially the following elements:

- 1) Indicator name;
- 2) Definition of the indicator's unit and its precision;
- 3) Indication of the SA which the indicator concerns (with reference to the particular SA *fiche*);
- 4) Indication of the PS which is to be assessed with the use of the indicator (with reference to particular PS *fiche*);
- 5) Indication of the dimension of the PS description (quantity, quality, availability, effectiveness) which the indicator concerns;
- 6) Description of the indicator – constituting the development of its name, with detailed indication of variables, the combination of which forms the indicator (or a variable with which it is identical);
- 7) Methodological explanations – including metadata necessary for the indicator's interpretation, including:
 - a. detailed definitions of variables, the combination of which forms the indicator (or a variable with which it is identical),
 - b. definitions of terms used in the definitions of these variables (this variable). Where these definitions concern terms already used in the public statistical information system, they should take into account definitions already adopted in public statistics (the same for the terms already defined for the purpose of other information systems constituting the data sources treated as the basis for indicator's calculation). Moreover, if this is important for the explanation of terms or interpretation of indicator, the relevant legal provisions defining such terms need to be quoted,
 - c. mathematical formula for indicator's calculation.
- 8) Interpretation guidance – if the indicator is e.g. characterised by positive or negative correlation; the way of interpreting indicators variability; the possible scope of indicator's value;
- 9) Indication of data source(s) on the basis of which the indicator is calculated and the particular input source(s) from which the data will be acquired to PSMS, as well as the planned frequency of feeding the PSMS with data and particular dates of availability of data (e.g. “quarterly data; available until the end of the second month after the quarter completion”);
- 10) Indication for which territorial levels and for which time scope the indicator will be available in the PSMS.

4.4.1 Rules for identification and selection of indicators

The selection of the appropriate indicator requires a comprehensive approach. One of the basic assumptions is the reduction of the number of indicators, and the inclusion into the PSMS resources only those indicators which precisely describe the selected service in the given dimension. This is important for facilitating problem analyses and for conducting services assessments. At the same time, the PSMS indicators system should be developed in line with the principles of¹⁰: coherence, adequacy, hierarchy, flexibility, sensitivity, uniqueness, as well as data confidentiality, transparency and security.

- **Principle of coherence.** The set of selected indicators should cover the entire thematic scope of a given area.
- **Principle of adequacy.** The indicator should accurately describe a given service in relation to the relevant dimension – quantity, quality, availability or cost-effectiveness.
- **Principle of hierarchy.** Each thematic area should be divided into groups of indicators characterising this area. An example of such division is presented below:
 - leading indicators;
 - detailed indicators;
 - context indicators.
- **Principle of flexibility.** The number and nature of indicators should depend on a given service area. Establishing a fixed number of indicators for individual thematic areas is not recommended. One should, however, strive to select the minimum possible number of indicators necessary to describe or measure a given service.
- **Principle of sensitivity.** The selected indicator should reflect changes over time and spatial changes in terms of, respectively: quantity, quality, availability or cost-effectiveness of the described service.
- **Principle of uniqueness.** This indicator should not duplicate the information contained in other indicators.
- **Principle of data confidentiality, transparency and security.** Compliance with this principles requires respecting the obligation to maintain statistical confidentiality; to conform with data protection procedures in the process of collecting, processing and disseminating data; it is also necessary to ensure proper balance between the obligation to respect the principles of data confidentiality and safety and the principle of data availability.

¹⁰ Based on the European Statistics Code of Practice.

4.4.2 Quality criteria of indicators

In order to ensure the appropriate selection of indicators it is necessary to comply with the quality criteria contained within the European Statistics Code of Practice (ESCP¹¹), i.e.: relevance, accuracy and reliability, accessibility and clarity, timeliness and punctuality, comparability, coherence and minimisation of costs and burdens imposed on the respondents.

- **Relevance.** The indicator should meet the information needs of users and should contribute to the streamlining of the decision-making processes.
- **Accuracy and reliability.** The indicator should be based on accurate data and should be possible to calculate with the required precision.
- **Accessibility and clarity.** The indicator should be easily accessible by means of simple procedures and should be available in the expected form together with relevant information (and appropriate metadata), so that it can be optimally used and correctly interpreted; data used for the purpose of calculating the indicator should be accessible; its interpretation should be intuitive and it should be understandable to all types of users.
- **Timeliness and punctuality.** The indicator should make it possible to assess the time which elapsed between the period covered by the data and the date of making the data available (i.e. the date on which the data could be used within the monitoring system); in this context the period between the officially planned and the actual date of making the data available is also relevant (as it makes it possible to identify the existing delays).
- **Comparability.** The indicator should be temporarily and spatially appropriate by ensuring relevant sets of data, and thus the information continuum; it should be calculated in line with the uniform methodology, its definitions should be based on the same assumptions and classification standards (e.g. Polish Classification of Business Activity – PKD) and it should remain in line with the uniform territorial breakdown of the country.
- **Coherence.** The indicator should be consistent (coherent) with other indicators obtained from different sources in order to make it possible to carry out more comprehensive analyses. At the same time, the indicator should not duplicate the information contained in other indicators.
- **Costs and burdens imposed on respondents.** The acquisition of the indicator should impose minimal burdens and costs on respondents (both in financial and non-financial terms) or should impose no such burdens and costs at all.

4.5 DATA SOURCES

The following hierarchy of data sources is suggested:

- the Central Statistical Office (CSO) of Poland – official statistics' information systems;

¹¹ <http://ec.europa.eu/eurostat/documents/3859598/5921861/KS-32-11-955-EN.PDF/5fa1ebc6-90bb-43fa-888f-dde032471e15>

- central government administration – administrative registers and information systems;
- local government units – administrative registers and information systems;
- service providers – gathered data.

In order to eliminate the identified information gaps relevant activities are planned to be carried out – such activities will include the analysis of the availability of data “at the source”, i.e. data which are or which could have been gathered by the entities responsible for the provision of public services and their suppliers (“bottom-up approach”). Such activities will be carried out by local government partners within the so-called Groups for the Exchange of Experience, and their results will be utilised by the individual Thematic Working Groups in order to supplement the results of data sources exploration carried out in line with the “top-down approach” (in particular with regard to identifying the above-mentioned information gaps).

The undertaken activities will provide an opportunity to identify the unused sources and data keepers, as well as to identify information gathered without a justified reason. On the one hand, it can help supplement the scope of gathered data (by including a new source of data in the annual Programme of Statistical Surveys of Official Statistics); on the other hand, it can lead to resigning from certain reporting obligations.

In the course of an expert discussion the most adequate criteria of data sources assessment within the framework of this project were selected:

- Accessibility – ensuring (in organisational and financial terms) the ability to obtain data whose content and format is appropriate for the purposes of implementing the project;
- Information continuity – lack of data gaps or data gaps reduced to minimum within the required/necessary temporal and territorial dimension;
- Timeliness – the newest, validated data are readily available;
- Defined methodology – possibility of verifying the method of acquiring and processing data in substantive terms, ensured e.g. due to the availability of metadata;
- Possibility of integrating data with other sources (in the course of subsequent works).

5 CONDITIONS OF DATA ACQUISITION AND INTEGRATION

Management of information processes supporting the public service monitoring entails planning, organisation, supervision and control of a number of activities including obtaining information from various sources, its collection and storage, processing, making available and distribution in the form of pre-defined indicators. The system should be fed in a coherent and automatized manner.

When choosing the sources of data which would feed the PSMS, both at the initial stage and subsequent update stages, it is necessary to take into account the existing information infrastructure, i.e. the complex of information systems and resources used for different purposes and servicing the social, economic and political processes at the national and regional level in Poland. Thus, when identifying potential data sources, one should focus on the needs of central and local government authorities, other public sector entities, non-governmental organisations, citizens and economic entities related to the provision of public services.

It is important to take into consideration the conditions in which the above-mentioned entities function, bear in mind information gaps existing between the resources at hand and the data necessary to manage rendered services in a rational and efficient way.

The potential sources of information, based on which the PSMS is to be built, will be subject in the following phases to:

- an analysis of the possibility to obtain additional output data from the developing system of statistical research conducted by the GUS and other national authorities, the central and local government administrative bodies empowered by the act on the public statistics,
- alternative data sources, i.e. administrative systems (centralised and distributed) and non-administrative systems not used so far by the public statistics. What is also worth considering, are the Big Data resources – currently developing dynamically¹² (at a later stage – in the context of filling the information gaps identified at the stage of methodological work).

The CSO's current experiences resulting from its work concerning the creation of data bases with metadata and specific IT solutions used in them enable advanced analyses (including the spatial ones) at the level of different groups of users. Additionally, they will be applied not only at the stage of conceptual work, but also at further stages defining links between different data feeding the PSMS, or also for the purpose of the system creation itself.

¹² Big Data – large, variable and various data sets incoming in real time, often unstructured and of high velocity, requiring the use of innovative technologies, tools and IT methods in order to obtain from them new, useful knowledge.

5.1 DATA SOURCES INTEGRATION

While the output data from the public statistics system are compiled according to uniform standards, in the course of work it is necessary to take into consideration the fact that there are myriad administrative systems/registers not linked to each other. Data sources may be of different structure, have different IT solutions, different material and subjective scope, as well as they may play a different role, depending on the aim for which they have been created. Therefore it seems that the appropriate compilation of information from data sources, namely its integration, is of key importance. In order to do that, it is necessary to distinguish the essential fields focusing on reference registers covering the most important communities (populations). The integration should be based on linking data from many heterogeneous sources, so that one could obtain homogeneous, consistent set of compiled data. The work already in progress should have the following objectives:

- creating mechanisms aiming at providing safety of data at each stage of processing;
- creating metadata system;
- introducing a standard for entering variables into the registers;
- defining indicators for providing the quality of data in registers, concerning:
 - the reasons for and the scope of data gaps and values;
 - the reasons for and the scope of mismatches;
 - the evaluation of objects and variables, based on which the monitoring indicators are calculated;
 - inconsistencies between registers;
 - gaps in metadata.

5.2 INFORMATION SOURCES METADATA

When it comes to describing properly the quality traits of gathered information, it is necessary to feed the system with information describing data, i.e. the metadata. Their essential task is to facilitate the access to data and its appropriate interpretation. Metadata must be then complete and understandable for the user. As the scope of reference information is wide, it is possible to distinguish several types of metadata:

- reference – covering variables and their definitions;
- methodological – describing methods of data collection, its processing, estimation, methodological documentation etc.;
- qualitative – describing data synthetically according to a quality component (usefulness, accuracy, timeliness and punctuality, comparability, consistency);
- operational (systemic) – collecting technical information on the functioning of metadata environment.

The CSO has developed the System of Statistical Metadata and introduced it to statistical practice; it is a tool covering descriptions of concepts and statistical variables used

by the public statistics, classifications and codes lists, legal acts, research descriptions and other metadata. The System of Statistical Metadata provides for:

- creation and modification of the structures for describing metadata and their links;
- collection of metadata by many users in different areas;
- integration of metadata, standardization, prioritisation and avoiding the redundancies in metadata;
- management of privileges for all users defining metadata in the public statistics (also from outside the CSO).

Under the System of Statistical Metadata the Information Standards Repository has been established, which is a knowledge base covering metadata on information systems of public administration, i.e. systems for information collection, compiling and processing by government administrative bodies and local government units, other government institutions, registering bodies and Narodowy Bank Polski, held based on competence provisions or other legal acts connected directly with executing statutory responsibilities.

The current system, when fully resourced and cyclically updated, may be used by implementing its information content in the scope necessary for the Public Services Monitoring System.

5.3 CHALLENGES CONNECTED WITH THE USE AND INTEGRATION OF DATA SOURCES

One of the conditions of using the external administrative and non-administrative systems as sources of data feeding the Public Services Monitoring System is that they conform with the quality standards, among other things by means of harmonisation of methodology, unification of classification and information standards (classifications, nomenclatures, typologies, concepts, dictionaries).

The key issue one has to take into account is the fact that the obligation to collect and compile data in individual departments is very deep-rooted. Each register is characterised by separate legal provisions and has a specific subject. This “autonomy” of administrative registers in Poland causes redundancies in data, methodology differences, information inconsistencies (internally contradictory and logically inconsistent data) and lack of interoperability between registers. Additionally, in spite of statutory obligation to use codes adopted in the National Official Register of Territorial Division (TERYT), one may notice a freedom of recording the names of cities and address identifiers of streets in public administration IT systems. In practice, the IT systems held by local and central government units use the unofficial names of cities or own names combining the official names, and the names of streets are different than those given under resolutions of municipal councils. It is also common to use the short names of cities.

Thus, deciding on the use of alternative data sources in the construction of information characteristics, we should bear in mind that they are not specifically dedicated to statistical surveys. Each register is built on a basis of the separate legislation with the purpose specified

therein and directly supporting the implementation of the objectives and tasks of the units keeping these registers.

In addition, some registers are distributed and kept by many entities (e.g. poviats, starosties, marshal's offices, city and gmina offices), which entails a possibility of applying various technological solutions, different formats of stored data, different manner of data supply and update, etc. The multiplicity and diversity of administrative data sources and the fact that the statistical system is separate from administrative systems require a number of actions in order to assess which administrative register may be a source of data useful from the point of view of the Public Service Monitoring System's requirements. Also, the different purpose for the establishment and operation of both systems will generate methodological problems related to the comparability of the definitions of information objects and characteristics.

In using the administrative registers for the PSMS purposes, the key role is played by:

- obtaining the complete community to be analysed by acquiring information from one register or by integration of data from several sources,
- quality of administrative sources, which may not be determined separately, in isolation from other sources or reference populations due to the numerous aspects of the issue,
- need to generate a wide spectrum of data by any cross-sections, territorial division and specific state.

Critical seems to be the use of multiple administrative sources determined by the diversity in terms of quality, including the topicality and completeness of data. The work carried out in this regard cannot be done in a dispersed manner, with the absence of a uniform standard and consistency in handling the registers, both in acquiring data from keepers as well as at the stage of using in statistical processes (processing, analysis). The structured way of using administrative sources is also supported by a need to determine the quality of collected data and statistical products created therefrom, which, due to numerous aspects of the issue, is difficult to measure. It must be assumed that it will be necessary to carry out the work associated with developing methodologies including:

- **quality assessment of data** related to the methods of quality assessment and implementation into practice, so that it is possible to generate quality indicators on the registers, data contained therein and the statistical characteristics created on a basis of the administrative registers;
- **improving the quality of administrative data** related to the ways of analysing and using the administrative data, depending on their type:
 - identification and address data – the variables containing: identifiers (PESEL, NIP, REGON), first names, last names, names and address information (in a form of names or codes) - countries, voivodships, poviats, gminas, localities, streets, numbers of real properties: buildings and flats,
 - classification data – **qualitative (not measurable)**, they are defined by a statistical characteristic, due to which every statistical unit of a set of samples, substances, processes, phenomena, etc. may be classified into the identified variants of the

- characteristic, without being assigned any particular measure. This is the information in the register, such as: gender, educational background, marital status,
- substantive data – **quantitative (measurable)**, they are defined by a statistical characteristic, which may be expressed directly using the units of measure – numbers, for example, age (in years), weight (in kg), income (in PLN), price (in PLN), etc.;
 - **new methods of creating** statistics based solely on the administrative data using one register or by combining data from several administrative registers.

6 IT OBJECTIVES

The defined substantive scope of the implemented project also determines the general framework of the target IT system – PSMS. In accordance with it, the IT system prepared for the PSMS purposes should support a range of business processes, in particular:

- **data collection** – acquiring the data from data keepers, data provider management, loading the data into the database of source data,
- **data processing** – i.a. processes of data validation, data classification and coding, data integration, data transformation, creating new variables, calculation of indicators,
- **data analysis** – sharing data exploration and analysis methods in order to obtain additional information and conclusions,
- **data dissemination** – publication of analytical results, studies and statements while observing statistical confidentiality, information publication management and handling users' queries;

providing **gathering of data and metadata** within each of the above-mentioned processes, supporting by means of technical **administrative** processes.

Preparing a consistent vision (**Figure 5**) of a modern system allowing to achieve the specific objectives of the project requires the adoption of preliminary assumptions which must be taken into account in developing its concept. The most important requirements, which it should meet include:

- compliance with the applicable legislation,
- construction based on open standards,
- modular structure – we should avoid redundancy in the functionality among the modules,
- multi-tier architecture structure – identifying data layers, business logic and presentation,
- providing an adequate level of protection,
- easy expandability,
- user friendliness.

In addition to the substantive aspects mentioned in the previous chapters, what is very important in monitoring systems is the **speed and completeness of the information provided**. Assuming that the **PSMS** will be supplied from distributed data sources, a special emphasis should be put on effective and timely data collection and data processing from the operational to analytical form.

The implementation of the above-determined objective requires solving at least the following issues within the **PSMS**:

- providing a central source of statistical metadata,
- providing a consistent and comprehensive data supply process,
- managing data transformations, processing, validation and integration processes in the most automated way possible,
- providing a uniform and consistent data collection model – microdata and aggregates, and data dissemination model – also observing the rules of statistical confidentiality,

- providing extensive reporting features to support carrying out cross-cutting analyses and decision-making (e.g. benchmarking, forecasting, data mining functions).

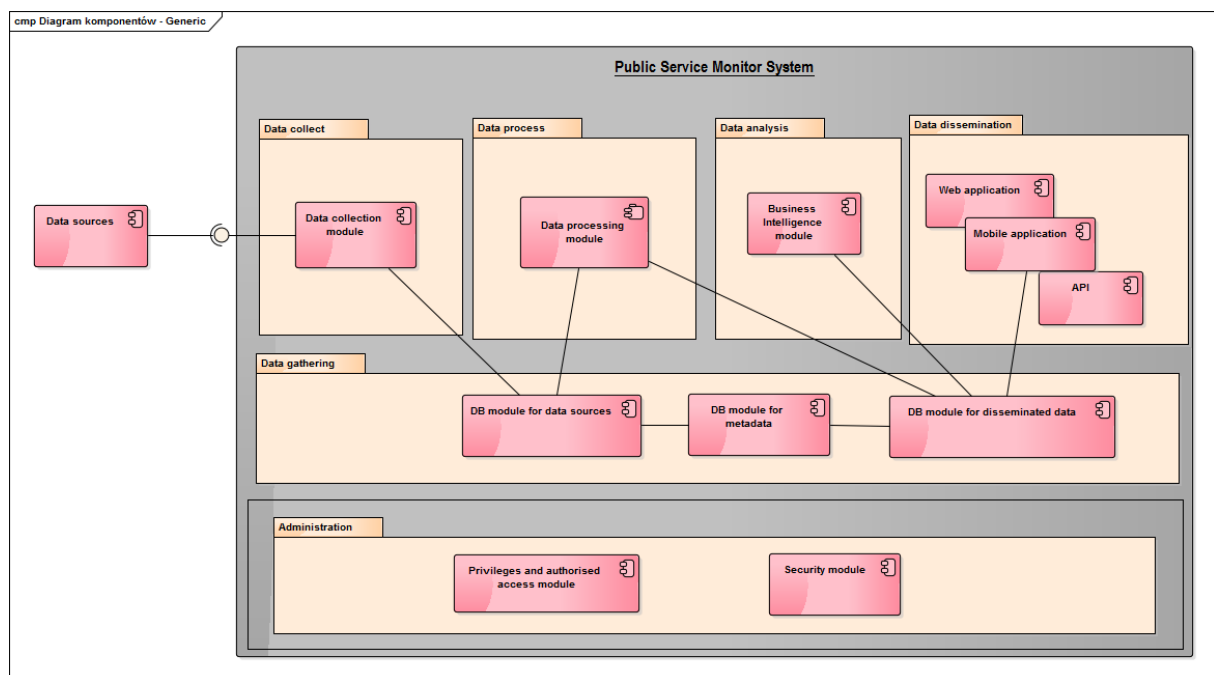


Figure 5 General IT concept of the PSMS

Particular attention should be paid to the identification of relevant data sources for the system, so that they can satisfy business needs of target groups of the system (as defined in Chapter 3), in the most complete (*appropriate subjective and objective coverage*), adequate (*the level of detail adequate to the surveyed/analysed phenomena*) and coherent manner (*data sets harmonised over time and being components of the value of indicators which monitor services*). Therefore, in case of the **PSMS** it seems very important to determine the initial catalogue of public services and quality indicators shared by the system. This will allow to properly diagnose the system environment and define data sources.

It is preliminarily estimated that the PSMS system should cooperate with the following types of external sources:

- PSIS – Public Statistics Information System
- specified national IT systems of the government administration,
- specified systems/applications/modules/databases of LGU of any level,
- selected data of other public institutions,
- respondents.

6.1 IT EXPERIENCE OF THE CSO

Public statistics has a lot of experience in implementing systems for data collection, processing, analysis and dissemination. The work carried out at the CSO in recent years has

been aimed not only at increasing the scope of the processed data, improving their quality and enhancing the form of their presentation, but also at standardising statistical processes at the Office. Standardisation – based on the international model GSBPM (*Generic Statistical Business Process Model*) referred to both substantive and technical processes which constitute support processes for substantive processes. The above is confirmed by the projects implemented in recent years: National Agricultural Census and National Census round in 2010 as well as the PSIS and PSIS-2.

As a result of these projects, the CSO acquired and implemented modern technologies, improved the organisation of work, increased the level of data and system security as well as increased the employees' competence in the field of designing, implementing and using applications.

The data necessary to describe many phenomena are obtained by the CSO mostly from its own forms and statistical surveys, but also thanks to cooperation with many ministries and other offices and institutions (e.g. Agency for Restructuring and Modernisation of Agriculture, State Fund for Rehabilitation of Disabled Persons, National Health Fund, Agricultural Social Insurance Fund) as well as LGU.

Basic platforms for the acquisition of statistical data by the CSO are the Reporting Portal (it supports about 260 surveys on economic statistics), AnkietGUS (supports surveys on economic and social statistics) or TransGUS (acquisition of administrative data). One of the methods of data acquisition by the CSO is the Data Transmission Service (DTS), a WebService dedicated for data acquisition from distributed sources in XML format and for transmission of the data to the CSO central server. In 2017, this route will be used to transmit i.a. the information from the City and Gmina Offices from the gmina household registers regarding persons registered for temporary stay of more than 3 months, absent in connection with travelling abroad for temporary stay as well as the data on births and deaths from the "Source" system.

Currently, it seems that dedicated WebService service implemented as a data acquisition interface will be a sufficient solution, which will enable the fast and efficient transmission of the information from distributed data sources. The application of this solution will enable automated data transmission by external systems. It is also possible to implement in this service a function for issuing for the sender an Official Receipt Confirmation (ORC) with the structure specified by law.

For the CSO, the data integration process is an essential element of the entire statistical process. Carrying out statistical surveys in the area of social, economic or agricultural statistics, and in particular carrying out national censuses, constantly requires the CSO to be able to use various data sources (of various type, format, frequency, subjectivity, etc.). Knowledge of the information scope and structure of data sources is a key element for carrying out statistical surveys.

Due to the nature of the processed data, the CSO currently uses 2 platforms for implementing data control and integration processes: OBM system (system for processing source data into statistical data coming from administrative sources, with a possibility to work on personal data) and SPDS system (statistical data processing system).

Guaranteeing data integration requires, first of all, preparing appropriate metadata, in particular a catalogue of surveyed phenomena (variables), code lists and classifications. For many years, the CSO has been taking care of the consistency of the metadata layer, providing not only the implementation of needs of statistical surveys, but also in the broader regards, providing the public administration with classification standards, both national and international.

The CSO also has extensive experience in data collection, starting from the data warehouse for the PSR and NSP 2002 censuses and HINEX system for foreign trade statistics, through the ABM system prepared for the PSR2010/NSP2011 censuses, to the currently applied systems of Local Data Bank and Statistical Data Warehouse - Public Data Warehouse (SDW-PDW). The data warehouse is a type of a database organised and optimised in terms of the speed of data search and analysis. It usually stores a huge amount of data describing the surveyed phenomena, by referring to specific points in time, which allows to create multi-annual time series.

The Local Data Bank (LDB) is the largest Polish public database about the economy, society and environment. It offers more than 43 thousand statistical characteristics grouped thematically by territorial division units of Poland. The SDW-PDW data warehouse system collects about 50 million aggregates within 24 thematic areas. The environment is divided into 2 parts: internal warehouse -data (microdata and microaggregates) available for internal users only and external warehouse – aggregated data to be made available for external users. Data published by the CSO provide their consistency with keeping statistical secrecy as referred to in Article 10 and Article 38 of the Act on public statistics¹³.

The resources of both systems are constantly updated with new features, presented to users on the Internet in a descriptive, tabular and graphical form. The content of the databases is a wide range of information relevant in the decision-making process of state administration institutions, local governments or entrepreneurs. They are also an important analytical resource for scientific and academic communities. The thematic size and detailed information to the level of a locality makes them important for every citizen, by fostering the development of the civil society.

The area of statistical data dissemination is a “window to the world” of official statistics. Publication of the results of statistical surveys is a responsibility of the CSO, for both domestic and international users, including Eurostat. This will also be one of the main functionalities of the PSMS system being developed.

The publication of data in the system should be done by means of:

- Web application – standard form of data presentation,
- mobile application – quick and direct access to information from any mobile device,
- API – set of rules and descriptions, in which external programmes may use the functionalities of the data presentation application.

¹³ bip.stat.gov.pl/prawo/akty-prawne/ustawa-o-statystyce-publicznej/

From the user's point of view, this layer is a key element of the system and requires special attention. While the scope of collected data defines the universe of information held by the system, the dissemination layer should support users in better reception/understanding of these data.

The dissemination layer should be primarily focused on the user, easy to use, intuitive, ergonomic and user-friendly. It should have various forms of data analysis and presentation: tables, charts, maps, dashboards, animations. The developed but not distracting visualisation will allow the user to quickly receive information and turn it into knowledge.

A formal requirement, which as of today is set for newly created applications in the public administration is to comply with the requirements specified in the Ordinance of the Council of Ministers of 12 April 2012 on the *National Interoperability Framework, minimum requirements for public registers and exchange of information in electronic form and minimum requirements for ICT systems*. In ICT systems of entities implementing public tasks for the presentation of the information resources it is required to guarantee that these systems meet the requirements of the WCAG 2.0 standard, taking into account the AA level – i.e. medium.

One of the more important requirements set for the PSMS dissemination layer will be to guarantee the availability at the same level of information on any mobile device, e.g. tablet, smartphone, etc. Therefore, it will be necessary to use such technologies which will meet this requirement. One of such currently developed trends is the technology of Responsive Web Design –

– technique to design a website in such a way so that its appearance and layout adapted automatically to the window size in the device on which it is displayed. For the correct preparation of the applications both visually and adapted to the WCAG 2.0 standard, it is necessary to create the application consistent with the HTML 5 and CSS 3 standards. An example of the PSMS website is shown in **(Figure 6)**.

Public statistics has rich experience in designing data sharing systems (Local Data Bank, Knowledge Databases, STRATEG, Geostatistical Portal, REGON and TERYT registers), which it continues to develop in technological and visual terms.

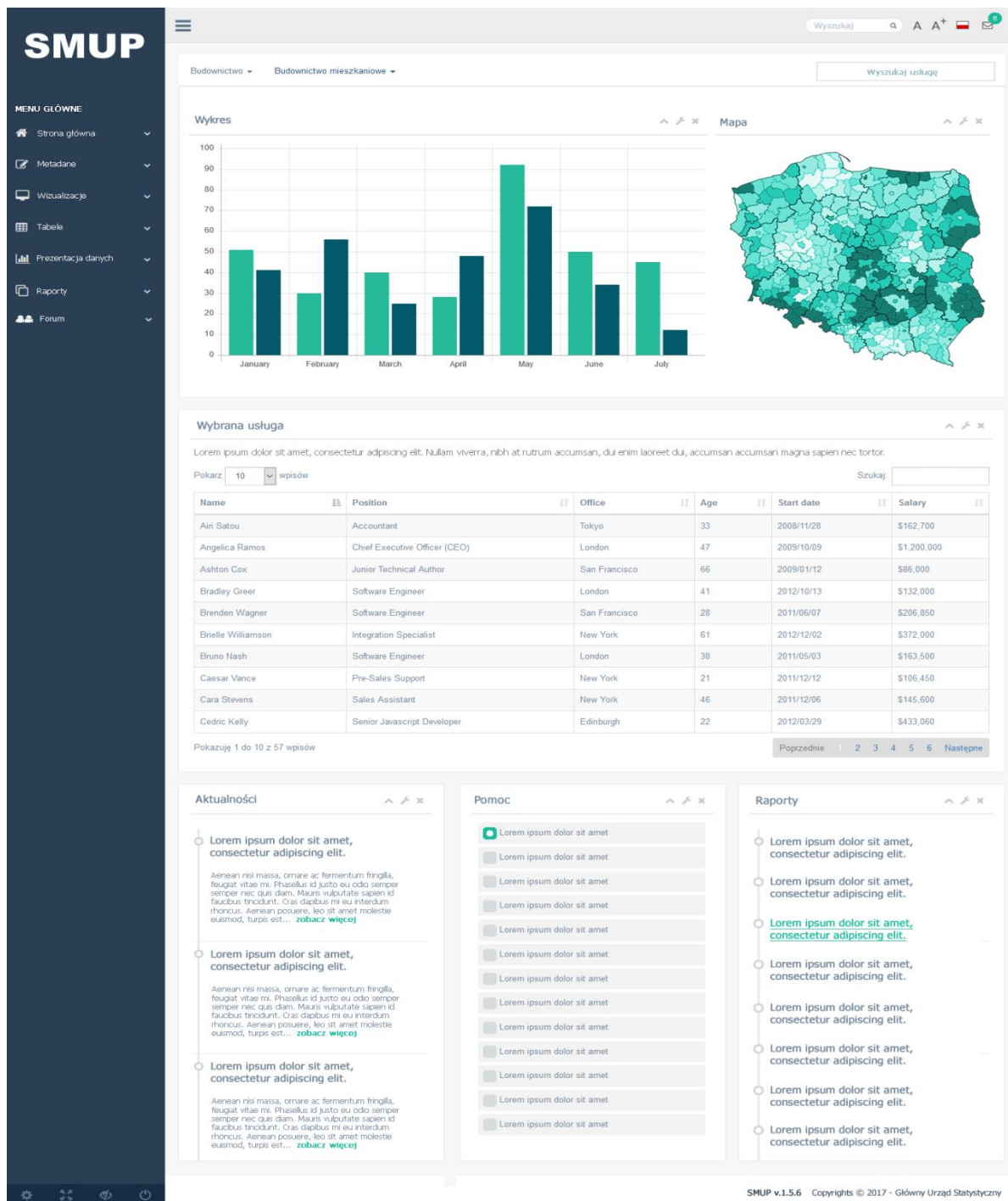


Figure 6 Example of the PSMS website design

Based on current experience – in particular using the experience from the STRATEG system – we may try to define an exemplary layout of the website and a set of modules which could be held by the PSMS sharing application:

- Service search module – searching for services according to the given criteria,
- Service visualisation module – presentation of services in a form of a table, map and chart,
- Analysis module – additional analyses of ranking,
- Metadata module – description of services, methodology of surveys, dictionaries and metadata, FAQ,
- Administration module – module to manage users, user grouping and profiling, presentation of statistics related to the use of the application.

6.2 ASPECTS REGARDING SECURITY OF IT SYSTEMS AND DATA

When implementing the **PSMS** project, we should take into account the basic aspects of security of IT systems (informatics) and data processed in these systems. What is necessary, is, first of all, the compliance with the currently applicable legislation (*acts, regulations*), but we must also include announced legal amendments (*GDPR – General Data Protection Regulation*), which harmonise the current national legislation, giving a consistent level of data protection in the EU.

For this reason, it is very important to provide technical and organisational data security, this obligation being implemented as early as at the project design stage. The best solution is the default data protection implemented in accordance with the level of technological progress and continuous management of security of ICT systems (ISO 27001). It is required to consider the creation (and then update) of internal procedures in accordance with the IT security standards as well as the development and implementation of activities related to the continuous improvement in IT security.

An important aspect of IT security is also periodical carrying out of security tests so as to collect information necessary to assess the system security level and detect potential risks as well as the validation of the configuration of ICT resource protection systems.

IT security, due to the speed of technological change, is characterised by specific variability and is at high risk. All the more, importance must be attached to the data processing rules in order to maintain:

- legality, reliability, transparency (*data must be processed in accordance with law, reliably and in a transparent manner for a person being a subject of these data*),
- limitation of purpose (*data must be collected for specific, explicit and legitimate purposes; must not be processed in a manner inconsistent with these purposes*),
- minimising the scope of data collection (*data must be adequate, and limited to what is necessary to achieve the purposes for which they are processed*),
- accuracy (*data must be accurate and updated, if necessary; inaccurate data in view of their processing purposes must be immediately deleted or rectified*),

- storage reduction (*an obligation to store data in a form which allows to identify data subjects, no longer than it is necessary to achieve the purpose of processing; then they should be deleted, anonymised or sent e.g. to archives*),
- integrity, confidentiality, accountability (*data must be processed in a manner guaranteeing their appropriate security, including the protection against unauthorised or illegal processing or unauthorised access or accidental loss, destruction or damage*);

In organisational terms, it is necessary to consider i.a. the possibility of complementing the design documentation by assessment of the impact of the solution on data protection (particularly if the system will process personal data or other legally protected information). In technical terms, it is necessary, first of all, to regularly monitor various layers of the PSMS system (from the network layer to the application layer) for system security incidents. It is also necessary to build awareness of cybersecurity among system users.

6.3 INITIAL IMPLEMENTATION OBJECTIVES REGARDING IT

For the purposes of carrying out design work on the system, with regard to IT, the competence of the IT team, acquired during the implementation of many IT projects, will be used. This group collects analytical, design, developer, infrastructure, administration and IT security competence, providing a comprehensive approach to the IT issues in this project.

In addition – as the target system will also affect IT in LGU – the group will be extended by a person experienced in implementing e-administration projects in LGU. This will guarantee the efficient flow of information on IT solutions among the project partners, as well as will allow to conduct wider consultation of the project with LGU.

Due to the continuous technological development and potential changes in the formal and legal environment of the PSMS project, currently it is not possible to prepare detailed implementation objectives of the project in the IT area. The planned time to launch the system is, from IT perspective, a completely different “century” and we should take it as an axiom that the system being designed is to be modern and expandable. It is difficult to predict what technologies and trends will be applicable in several years.

In this context, the choice of an appropriate technology and designing the target solution will require a continuous analysis of the latest available informatics. To this end, it is being considered to use the information developed as part of reports published periodically by the world units specialising in the use of information technologies, such as Gartner¹⁴ and Forrester Research¹⁵. These reports provide a comprehensive analysis of the current situation in the given IT coverage area, as well as a detailed analysis of the IT trends. At the level of the application layer, it is possible to use these reports i.a. in the areas of *data warehouse, business intelligence, advanced analytics platforms* or *mobile app development platform*.

¹⁴ www.gartner.com/technology/research/methodologies/methodology.jsp, <https://www.gartner.com/analysts/coverage>

¹⁵ www.forrester.com/coverageareas

Also from the point of view of the network and server architecture, it is necessary to track changes in technologies and trends. Certainly, we should consider a possibility of using for the PSMS cloud computing solutions at least at the level of the data sharing module.

Another aspect likely to have a significant impact on the project implementation method are legal changes of both e-administration and data and system security. It is obvious that the system must be adapted to the requirements of applicable law.

In the area of e-administration, we should therefore take into account the following:

- European legislation e.g. eIDAS Regulation¹⁶, GDPR recommendation¹⁷,
- Polish legislation, including in particular:
 - Ordinance on the National Interoperability Framework¹⁸,
 - Programme of Integrated Informatisation of the State¹⁹,
 - recommendations of the Committee of the Council of Ministers for Digitisation²⁰,
 - planned and implemented cross-sectoral projects of the Ministry of Digital Affairs²¹,

while in the area of security, it is necessary to adapt to the activities resulting from the Cybersecurity Strategy of the Republic of Poland and to track information about current IT security incidents and detected vulnerabilities in the systems/ applications, i.a. on the websites of CERT Poland²², ISSA Poland²³, Niebezpiecznik²⁴, etc.

The above-mentioned aspects should be constantly – in the appropriate periods of time – monitored and analysed in the context of their impact on the PSMS system being designed.

7 DESCRIPTION OF THE *PUBLIC SERVICE MONITORING SYSTEM PROJECT – PSMS CONCEPT, CARRIED OUT IN THE YEARS 2017-2018*

The project is a unique undertaking implemented jointly by government administration units and local government corporations. The project partners are the Ministry of the Interior and Administration, CSO, Association of Polish Cities, Association of Polish Poviats and the Silesian Association of Gminas and Poviats.

The need to optimise the provision of public services was a reason for which in 2014 the Operational Programme Education Knowledge Development (OP KED) was added a project

¹⁶ eidas.pl/

¹⁷ gdpr.pl/

¹⁸ nteroperacyjnosc.pl/docs/D20120526.pdf

¹⁹ mc.gov.pl/konsultacje/program-zintegrowanej-informatyzacji-panstwa/program-zintegrowanej-informatyzacji-panstwa

²⁰ krmc.mc.gov.pl

²¹ mc.gov.pl/projekty

²² www.cert.pl, www.cert.gov.pl

²³ issa.org.pl/

²⁴ niebezpiecznik.pl/

assuming building a public service monitoring system in Poland. It was assumed that the process of creating the System will consist of several successive undertakings:

- **project I:** *Development of the concept of Public Service Monitoring System (2017-2018)*;
- **project II:** *Building and launching of the System (2019-2020)*;
- **project III:** *Development and dissemination of the System (from 2021)*.

The project implemented in the years 2017-2018 is aimed at developing the concept of the public service monitoring system. Its scope includes the issues related to improving the business conditions and provision of public services. The implementation of the first phase of building the System is a part of the Operational Programme Education Knowledge Development (OP KED) co-financed by the European Union under the European Social Fund and from the national budget. The PSMS objectives are contained in Priority Axis II. *Effective public policies for the labour market, economy and education* and, as part of it, in the Measure 2.18 *High quality administrative services*.

The substantive scope of the project includes:

- 1) specifying the ultimate objective of the PSMS model and the range of services covered by monitoring;
- 2) developing a set of indicators and methods for their presentation in a form of tables, maps and charts;
- 3) specifying data sources for the calculation of the indicators;
- 4) designing a system of permanent information supply;
- 5) defining the functionality of the system and technical assumptions i.e. requirements regarding the necessary tools and software as well as the user interface design;
- 6) developing assumptions for building a repository of good practices.

The project implementation is divided into two tasks. Within the framework of Task I, the result of which is this document, a general concept of the system has been developed. Task II will be dedicated to designing the system.

The project includes the assumptions of the National Interoperability Framework, standard WCAG 2.0. Thus, the system will take into account the detailed requirements for the technical accessibility of the PSMS website for people with disabilities.

7.1 IMPLEMENTATION ASSUMPTIONS OF THE PROJECT

The work will be carried out in groups, whose members are the experts of the individual Partners.

The project team is composed of: Group for Public Service Research Methodology, Thematic Working Groups, Groups for Exchange of Experience, Group for Integration of Sources, Group for Thematic Scope, Group for System Functionality and IT.

Group for Public Service Research Methodology – is responsible for formulating the conceptual assumptions of the System, preparing standard tools and specimen documents as well as methods of operation. The members of the Group will substantially supervise work

and will take care of integrating the effects of all activities carried out within the framework of other Groups.

Thematic Working Groups – develop the individual service areas. They are composed of the experts of the partners. The work of the groups may be participated in by representatives of data keepers or users of individual service areas. The groups are responsible for defining the framework of service areas, selecting services for monitoring and developing indicators, together with an indication of sustainable data sources, methods of calculation and interpretation. The groups will have at their disposal analytical materials from the meetings of the Group for Exchange of Experience and the results of consultations carried out by LGU associations. In their activities, the Groups will use the tools prepared by the Group for Public Service Research Methodology (e.g., service fiche, indicator fiche). The groups will synthesize the effects of work of the Groups for Exchange of Experience.

Groups for Exchange of Experience (GEE) – their members are members of self-governments and experts. The aim of their work is to acquire information on the information needs of LGU and economic operators and to test solutions developed by the Thematic Working Groups. In particular, the members of the groups will discuss the objectives of the system and will formulate their expectations towards it, will help in preparing effective mechanisms for data collection and analysis, will conduct pilot tests of the proposed solutions. Each group will be composed of 6 LGU of a given type, which stand out in terms of advancement of the applied solutions and experience in service monitoring.

Group for Thematic Scope – with participation of the Partner’s experts, will develop the range of public services, not mentioned by name in the OP KED 2014-2020, i.e. education, health care, social assistance and family support, culture and recreation, public safety and justice.

Group for Integration of Sources – will guarantee the consistency and integrity of the PSMS Project with the standards and solutions adopted in public statistics. In addition, the public statistics experts together with the Partners will develop the links between the data and the data sources identified by the Working Groups. They will also support the TWG experts in terms of determining possibilities and forms of acquiring data from distributed data sources.

Group for System Functionality and IT – will develop IT and technical assumptions necessary to build the public service monitoring system. The public statistics experts and cooperating representatives of the Partners will develop solutions in terms of: functional requirements of the System, technical parameters, initial technical design of the system (architecture, database, functional modules), detailed model of the system and layout.

7.2 WORK SCHEDULE

No	Tasks/subtasks	2017												2018											
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1.	Task No 1 – Developing the general concept of the Public Service Monitoring System																								
1.1.	Developing initial assumptions of																								

No	Tasks/subtasks	2017												2018											
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	the public service analysis method																								
1.2.	Developing initial IT objectives of the system																								
1.3.	Developing the methodology of work on the PSMS concept – specimen documents																								
1.4.	Reviewing the initial PSMS concept by the Joint Commission of Central Government and Local Government																								
2.	Task No 2 – Developing the specific concept of the Public Service Monitoring System																								
2.1.	Determining the initial substantive scope																								
2.2.	Diagnosing the data availability, identifying sources and analysis of possibilities of acquiring missing data																								
2.3.	Testing the solution in LGU – verification of a set of indicators and methods of their acquisition																								
2.4.	Determining the final scope of data contained in the PSMS																								
2.5.	Developing system links																								
2.6.	Determining functional assumptions of the PSMS IT system																								
2.7.	Determining technical assumptions of the PSMS IT system																								
2.8.	Verification of information links and metadata																								
2.9.	Developing definitive IT solutions regarding the system																								
2.10	Developing the Final Report – PSMS Implementing Concept																								
2.11	Reviewing the specific PSMS concept by the Joint Commission of Central Government and Local Government																								

7.3 PROJECT RISKS

The early identification of risks will allow to avoid or minimise potential threats to the proper implementation of the tasks. This will be possible thanks to preparing solutions which will be applied should any problems actually occur.

The assumed effect of Project I, implemented in the years 2017-2018, is to develop the implementing concept of a brand new comprehensive and consistent public service monitoring system. Ultimately, the system will have nationwide coverage and will cover a very wide set of information, however, the methods of operation used for this purpose are similar to tools used previously by the project partners. It is the experience of the partners in designing, building and maintaining databases and monitoring systems which reduces the level of risk associated with the failure of the project. In particular, this the experience of the CSO related to building the Local Data Bank and the STRATEG Development Monitoring System, experience of the Association of Polish Cities and of the Association of Polish Poviats in creating the Self-Government Analysis System and experience of the Silesian Association of Gminas and Poviats in systematic benchmarking of the LGU activities.

Due to the source of origin, in the implementation of the projects we identify internal and external risks. The internal risk may be associated with i.a. the lack of appropriate competence of the project team, inappropriate organisational structure or communication problems within the team. In case of the PSMS project, the **internal risk has been minimised as early as in the planning phase by:**

1. **engaging competent partners to the project implementation;**
2. **precise determination of organising the project team** (structure based on the divisions into groups with the precisely designated scope of tasks and defined rules of cooperation);
3. **preparing a detailed timetable of activities;**
4. **developing effective communication methods using modern IT tools (discussion groups, conference calls, etc.).**

Unlike the internal risk, the external risk remains beyond the direct influence of the project team. However, what is very important, is its proper identification and precise description in order that it was possible to plan activities aimed at mitigating the effects of adverse events. In case of the PSMS project, **the main sources of the external risk seem to be legal and technological factors and those associated with the changing information needs of stakeholders.**

Taking into account the legal factors – there is a **risk of legislative changes** which may occur both during creating the PSMS concept as well as in the period before starting (as part of another project) its implementation. Legal changes may apply both to the very subject of PSMS monitoring, i.e. public services and competence of individual public authorities, as well as the issues related to the content and availability of data sources, which will be supplied to the PSMS (i.a. the type, scope and form of the information collected in administrative registers and the rules of data protection and security). The effects of changes during creating the PSMS concept can be reduced by adjusting its final version to the changed

rules. On the other hand, it is difficult to anticipate any legal modifications, which will take place after developing the PSMS concept. Therefore, if the changes in the period directly preceding building the target system were significant, there is a risk that the PSMS concept may partially lose the value of topicality in relation to the applicable legal regulations. The project partners will keep on monitoring this type of risk, trying to reduce its potential threat by means of a flexible structure of the system.

There is also a risk **of technological changes** which may affect the topicality of the adopted IT assumptions. These changes may refer to i.a. the network and server architecture, data exchange and security standards and interface which is compliant with current trends and user-friendly, providing the availability on various – including the latest – mobile devices (tablets, smartphones, etc.). The project team will monitor the risk of such changes and propose appropriate solutions in advance.

Another issue is the risk **associated with the diversified and changing over time information needs of stakeholders**. It is about the diversification and changes in these needs both among and within the PSMS target groups. For example, sets of information expected by micro-enterprises and by large companies are different; different may be the expectations of authorities of large urban centres, and those of small rural gminas; different will be the needs of civil organisations, research centres and individual social groups (e.g., diverse in terms of age). The risk will be reduced by including, during the work on the final PSMS implementing concept, wide consultations with representatives of the target groups. The appropriate updater, controlled by the partners, will be an answer to this risk.

8 LINKS WITH OTHER SYSTEMS

In order to obtain the universal and comprehensive nature of the public service monitoring system, it is necessary to ensure complementarity with the existing data supply systems and with those which are planned to be implemented. In particular, this applies to these systems, which are co-financed from the European Union.

In accordance with the provisions of the Annual Action Plan for each priority axis as part of the Operational Programme Knowledge Education Development for 2015 and 2016, in the coming years the following projects will be implemented, which will result in the creation of monitoring systems collecting data on the provision of public services:

1. *Developing and implementing a tool to aggregate, analyse and monitor, at the national level, data from the assessment of social assistance resources, carried out at the LGU level.* The project will consist in developing a tool, i.e. a uniform model containing a standardised range of collected data and developed based on the scope of the data collected as part of the Assessment of Social Assistance Resources (ASAR) and in developing an IT tool to aggregate, analyse and monitor, at the national level, data contained in local and regional ASAR. At the level of gminas and poviats, the ASAR data are used mainly to diagnose the causes of social problems and to determine their impact on the level of social life. The results of local diagnoses allow, at the further stages of work in gminas and poviats, to plan short- and long-term projects to mitigate these problems, along with determining necessary institutional infrastructure resources, human and financial resources (e.g., conclusions and recommendations). On the other hand, at the voivodship level, based on the ASAR data from gminas and poviats, the process of creating (building) voivodship strategies, determining major lines of social policy, including lines of assistance intervention, is taking place. At the moment, there is no aggregation of the ASAR data at the central level, where, first of all, legislative conditions are created for implementing the lines of voivodship strategies and for the practical implementation of intervention tasks with regard to social assistance and inclusion at the level of gminas and poviats. The resulting IT tool will streamline policy management for the reduction of poverty and social exclusion from the national level. It will be used to compare the resources in the area of social assistance in territorial terms, to formulate recommendations for regional and local policies with regard to the policy for the reduction of poverty and social exclusion taking into account the specifics of individual territories, to measure their distance from achieving the objectives related the reduction of poverty designated at the national (in particular, in the Programme for Prevention of Poverty and Social Exclusion) and European level (in the Europe 2020 Strategy). This tool will be used to determine and modify the lines of public intervention, also in relation to the European Social Fund within the framework of the Regional Operational Programmes. The project will be implemented under the Measure 2.5 of the OP KED.

2. *Integration of the education system databases* The objective of the project is to create a coherent IT system to collect educational data. Based on analyses of IT systems used by individual educational institutions, it was found that institutions such as Regional Examination Commission, Central Examination Commission, Educational Research Institute,

regional education authorities and Ministry of National Education have their own IT systems, which do not exchange information with each other. The implementation of this project will allow to create a platform which will enable the exchange of data among many systems, thus eliminating repeated entering of identical data into educational databases. The major system, with which other databases will be linked, is the Educational Information System. The project will be implemented as part of the Measure 2.10 of the OP KED.

3. *Common space – common good – system to monitor changes in spatial management – phase I.* The objective of the project is to develop assumptions for building a monitoring system, finding ways to connect monitoring of spatial processes with a system for monitoring socio-economic phenomena and effects of development policies, and developing a database of indicators as a basis for the operation of the system. Construction of an integrated system for spatial monitoring is aimed at:

- delivering materials necessary for spatial planning carried out at various levels of the administration;
- creating the foundations for forecasting spatial development processes;
- assessing and forecasting the effects of pursuing public policies in the space;
- identifying and assessing the effects of the dynamics of changes in spatial management in relation with the adopted programmes and plans;
- providing information to a wide group of stakeholders (authorities, investors, non-governmental organisations and citizens).

The project will be implemented as part of the Measure 2.19 of the OP KED.

4. *Creation and implementation of a research tool for verification of the deinstitutionalisation process of foster care in the poviats.* The objective of the project is to create a set of about 100 indicators so as to enable a versatile, statistical description of the foster care deinstitutionalisation process in Poland. The indicators will be designed in such a way so as to enable their calculation in all 380 poviats defined in the Classification of Territorial Units for Statistics (NUTS level 4). In addition, the entire set will allow to construct a synthetic measure – FCD Index – to describe by means of one value the level of advancement of the deinstitutionalisation process in each analysed poviat.

Within the project, an IT tool will be developed for the repetitive indicator-based assessment of the foster care deinstitutionalisation process (FCD). It will provide the poviat authorities with the data to compare the status of foster care in a given poviat at the local (with other poviats), regional (with the average and best/worst voivodship results) and national level (with the average and best/worst results in Poland). The tool takes into account a number of contexts of the FCD process, including: (1) social, (2) demographic, (3) economic. The indicators will relate to institutional aspects thus enabling an analysis of self-government activities for: budget (financing the FCD process), infrastructure and human resources (resources held, including the preparation for system changes), organisation and finance (using external financing sources e.g. EU funds, Norwegian funds etc.). The tool will also take into account the potential of the third sector and agreements between the levels of self-government with regard to possible transformations of FC organisations. With its help, it

will be possible to carry out a scenario analysis comparing i.a. the costs of taking and abandoning transformations, as well as opportunities and threats and the FCD risk, along with options for their compensation. The project will be implemented as part of the Measure 2.8 of the OP KED.

9 PSMS AND STRATEGY AND PROGRAMME DOCUMENTS

The issues related to the availability and quality of public services are an important element of the European Union policy, as well as of the Polish development policy, which is reflected in official documents.

According to the assumptions of the “**Europe 2020**” strategy²⁵, the European Union is to seek the smart, sustainable and inclusive growth, and the cohesion – achieved by reducing the disparities – is to provide an even distribution of the growth benefits. This is directly related to the quality and availability of public services.

Also the **Partnership Agreement**²⁶, defining the strategy of European funds intervention in Poland in the years 2014-2020, as the lines of action in the area of public services indicates i.a.:

- integration of services provided by various public services;
- improved access to affordable public services;
- strengthened use of ICT technologies in public services.

The *Public Service Monitoring System – PSMS concept* project is a part of implementing the strategic project referred to in the **Responsible Development Strategy (RDS)**²⁷ as the *General public service monitoring system*. Its implementation is to consist in implementing several consistent projects of diversified nature (as non-competition projects carried out by the Ministry of the Interior and Administration and competition projects under the OP KED). In accordance with the RDS provisions, the projects included into the strategy are strategic tasks of the state.

The project is also included in the **Action Plan for the Efficient State Strategy 2020** – specific objective 5 *Efficient provision of public services*, line of intervention 5.5 *Standardisation and management of public services with a particular focus on digital technologies*. The subject of the project is also related to the provisions of **National Regional Development Strategy 2010-2020**²⁸, which assumes i.a.:

- improving access to public services and their quality;
- reducing disparities in access to public services;
- developing public services accessible via the Internet.

The Public Service Monitoring System will therefore support the implementation of activities, projects and programmes indicated in the most important strategy and programme documents aimed at optimising the provision of public services.

²⁵ Europe 2020. The strategy for the smart, sustainable and inclusive growth, Communication from the European Commission, Brussels 2010.

²⁶ The Partnership Agreement. The project after the amendments resulting from complementing the provisions by the EMFF and after negotiations of the operational programmes, Ministry of Economic Development, Warsaw 2015.

²⁷ The Responsible Development Strategy by 2020 (with a perspective to 2030). The document adopted by the Council of Ministers on 14 February 2017, Warsaw 2017.

²⁸ National Regional Development Strategy 2010-2020: Regions, Cities, Rural Areas, Ministry of Regional Development, Warsaw 2010.

10 VISION OF THE FURTHER DEVELOPMENT OF THE PSMS

The implementation of the project *Public service monitoring system – PSMS concept* is the beginning of the implementation of a several-years' task. After developing a detailed concept, it is assumed to prepare further non-competition projects under the Measure 2.18 of the OP KED, whose implementation would be a continuation of the project of building the public service monitoring system. The projects would include in particular:

- building and sharing the Public Service Monitoring System;
- developing a system understood as an improvement in the PSMS, in substantive, process and technological terms, and extending public services by further areas, as selected based on analyses and experience from implementing the current project;
- increasing the usefulness of the system by preparing a repository of good practices, developing a module of management reports, as well as promoting the best solutions and tools to support users in the application of the system (e.g., guide, tutorial).

Pursuant to the provisions of the Detailed Description of the Priority Axes OP KED, after launching the System, it is planned to carry out dissemination (information and training) activities for LGU (it is planned to support 617 LGU across the country) focused on the practical possibilities of using the system to take modernisation measures using benchmarking and benchlearning tools in a form of organising groups for the exchange of experience at LGU.