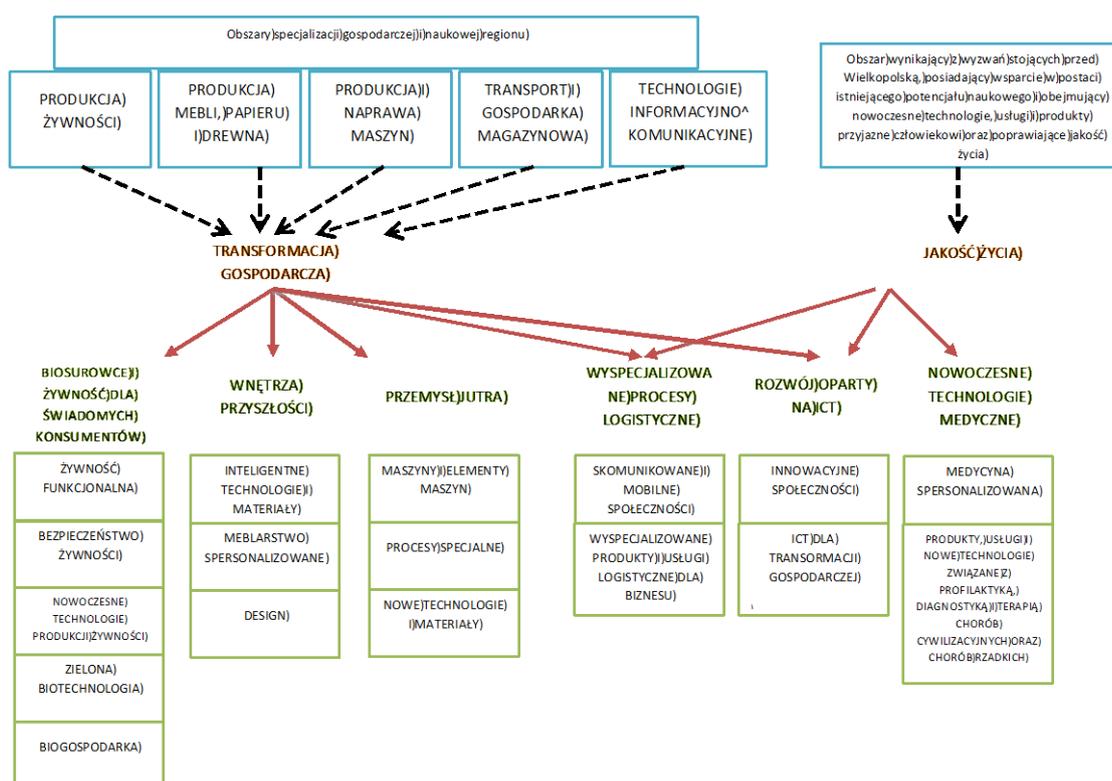


## 1.1. Smart specialisation areas in Wielkopolska

The specialisation areas identified are the result of the entrepreneurial discovery process and their nature is that of a strategic development vision for each of those areas. The chart presenting the identified specialisations is shown in Figure 19.

Figure 1 Smart specialisation areas in Wielkopolska



PL	EN
Obszary specjalizacji gospodarczej i naukowej regionu	Economic and scientific specialisation areas in the region
Produkcja żywności	Food production
Produkcja mebli, papieru i drewna	Production of furniture, paper and wood
Produkcja i naprawa maszyn	Machine production and repair
Transport i gospodarka magazynowa	Transport and warehouse management
Technologie informacyjno-komunikacyjne	Information and communication technologies
Obszar wynikający z wyzwań stojących przed Wielkopolską, posiadający wsparcie w postaci istniejącego potencjału naukowego, obejmującego nowoczesne technologie, usługi i produkty przyjazne człowiekowi oraz poprawiające jakość życia	The area resulting from the challenges faced by Wielkopolska, having support in the form of the existing scientific potential and covering modern technologies, services and products which are human-friendly and improve the quality of life
Transformacja gospodarcza	Economic transformation
Jakość życia	Quality of life
Bio surowce i żywność dla świadomych konsumentów	Bio-based raw materials and food for informed consumers
Żywność funkcjonalna	Functional food
Bezpieczeństwo żywności	Food safety
Nowoczesne technologie produkcji żywności	Modern food production technologies
Zielona biotechnologia	Green biotechnology
Biogospodarka	Bioeconomy
Wnętrza przyszłości	Interiors of the future
Inteligentne technologie i materiały	Smart technologies and materials
Meblarstwo spersonalizowane	Customised furniture industry
Design	Design
Przemysł jutra	Industry of tomorrow
Maszyny i elementy maszyn	Machines and machine elements

Procesy specjalne	Special processes
Nowe technologie i materiały	New technologies and materials
Wyspecjalizowane procesy logistyczne	Specialised logistics processes
Skomunikowanie mobilne społeczności	Connected and mobile communities
Wyspecjalizowane usługi i produkty logistyczne dla biznesu	Specialised services and products for business
Rozwój oparty na ICT	ICT-based development
Innowacyjne społeczności	Innovative communities
ICT dla transformacji gospodarczej	ICT for economic transformation
Nowoczesne technologie medyczne	Modern medical technologies
Medycyna spersonalizowana	Personalised medicine
Produkty, usługi i nowe technologie związane z profilaktyką, diagnostyką i terapią chorób cywilizacyjnych oraz chorób rzadkich	Products, services and new technologies related to the prevention, diagnostics and treatment of lifestyle diseases and rare diseases

Source: Authors' own elaboration based on results of the entrepreneurial discovery process

Areas of smart specialisation in Wielkopolska have been divided into 3 groups:

**1. Areas originating from traditional economic specialisations of Wielkopolska, with a potential to be modernised and updated owing to contacts with the scientific specialisation of the region**

1. **Bio-based raw materials and food for informed consumers** – Wielkopolska is a strong region both in terms of agricultural production and food processing. The *Bio-based raw materials and food for informed consumers* covers production of bio-based raw materials and food within the entire value chain – from good-quality raw materials, using modern methods and technologies as well as sales and distribution, and also production waste management. Bio-based raw materials of natural origin are produced from dedicated crops and production waste. Strengthening of the entire value chain should lead to increased creation of value added and keeping it in the region. Within this area, inter alia the following will be developed:

- a) Safe bioproducts and healthy food
  - Production of bioproducts and healthy food as well as of functional food;
  - Food safety;
  - Plants resistant to climate change;
- b) Modern food production technologies
  - Bio- and nanotechnology, molecular biology and food chemistry;
  - ICT traceability systems in food production safety, production management, decision support and automation;
  - E-agriculture
- c) Innovative methods of sale and distribution of high-quality food
  - Marketing of high-quality food and raw materials;
  - Innovative food production and distribution chains;
  - Food packaging and food design;
- d) Organic food production and waste management
  - Organic plant protection materials;
  - Bio-economy, including innovative natural products;
  - Production waste management and upcycling;
  - Fuel and energy management based on agro-biomass;
- e) Preparation and professionalisation of human resources for the specialisation area

**Rationale behind the choice of the specialisation:**

Economy of Wielkopolska, in terms of the number of persons employed and other economic indicators, is heavily concentrated in the area of food industry and agriculture. Food production is one of the key areas of economic activity in the region. When looking for economic transformation opportunities in this scope, resources of enterprises in the region were taken into account. It is important to note the wide variety of food produced in Wielkopolska and the presence of companies connected with the industry as suppliers or customers. Worth mentioning is also the agricultural production of non-food crops for the purposes of production of bio-based raw materials for different branches of industry. In addition, the region has a substantial scientific potential in the area of agricultural sciences, while scientific institutions carry out research taking into account the specific needs of enterprises from the specialisation area. The activities undertaken to meet the needs of the industry and the outlook for its development should be focused, first of all, on increasing the value added generated by companies from that industry located in the region. The value added should be increased by improving the innovativeness of products in response to the needs of customers as well as to major social challenges such as climate change, depleting resources of energy, water and food, or ageing of society. Saturating this area with knowledge is key for improving its competitiveness and innovativeness, just as internationalisation of products of high value added.

#### **Development vision until 2020:**

In 2020, a considerable number of companies connected with food production use modern management models, while the technologies they apply improve quality, durability and safety of their products. At that stage, food products from Wielkopolska have a strong brand, both in Poland and abroad, associated with high quality as well as with products which improve the quality of life of consumers and meet their specific needs. Owing to cooperation with R&D units, agricultural production, food producers and companies associated with the industry as suppliers are all competitive in the global market and create complete value chains. Innovative and thoughtful marketing as well as increased awareness of consumers contribute to improved availability of products of regional producers, both within and outside the region.

#### **Most important directions for the development of the specialisation until 2020**

- Integration of innovative value chains in food production and distribution.
- Building cooperation within regional value chains with the use of the Wielkopolska Smart Specialisation Forum.
- Creation of new, shared distribution channels, including with the use of e-commerce solutions.
- Creation of IT and information tools to support the entire process of food production and its marketing as well as health-promoting education related to food - certification, promotion of the regional food quality mark, both in Poland and abroad, food origin monitoring systems.
- Promotion of Wielkopolska food products in Poland and abroad, with the use of food design and packaging design.
- Development of new technologies leading to the development of high-quality food products.
- Creation, development and implementation of new technologies of production and control of comfortable, i.e. ready for consumption or requiring little processing by

consumers, traditional and organic food products with projected health-promoting functions.

- Elaboration of methods and development of organisation of processing processes contributing to reduction of losses in agricultural and food production (including delivery of supplies and distribution with the use of IT, transport services, ensuring longer shelf-life of food).
- Development of technologies of production natural and mineral fertilisers and means of production.
- Development of production and processing of bio-based raw materials.
- Carrying out and implementing the results of research providing basis for production and processing of renewable resources.
- Bio-conversion and bio-refinement of natural products and waste products of agricultural and food processing - cooperation with scientific institutions, IT, machine production industry; furniture, clothes, wood and paper production industry, and with the logistics industry.

### **Manner of qualifying beneficiaries and their projects to the specialisation area**

The basic selection of beneficiaries will take place at the level of beneficiaries' PKD [Polish Classification of Activities] divisions. Additionally, each project must undergo a content-related assessment in terms of its correspondence to the above-described specificity of the specialisation area and the areas of inter-industry innovations (p. 3). PKD sections qualified to the area are presented in an appendix to this strategy.

**2. Interiors of the future** – the furniture and interior design industry in Wielkopolska has strong manufacturing and production potential, while some of its areas, such as industrial design, develop rapidly. In addition, the region specialises in production of wood, paper and their products as well as in paper processing. The *Interiors of the future* area covers production of interior design products responding to the needs and challenges faced by contemporary man, within successfully cooperating value chains in the region, i.e. deeply rooted in its potential of production of raw materials, components and semi-finished products, as well as the internationally competitive ones, based on modern and attractive offer. The source of inspiration for interiors of the future might be results of scientific research in the field of, inter alia, psychology, anthropology and sociology, as well as technical sciences, owing to which it is possible to develop products which will meet the requirements of contemporary users. The development of the area should lead to creation and development of global brands originating from Wielkopolska. Within this area, inter alia the following will be developed:

- a) Specialist and customised furniture and interior design products
  - High-quality raw materials and components for production of furniture
  - Furniture made from regional raw materials, components and semi-finished products
- b) New applications for technologies and materials
  - Energy-efficient technologies
  - Paper and wood processing technologies, including packaging production technologies
- c) Industrial design and design-based innovation
- d) Recycling and upcycling in production of furniture and interior design products
- e) Preparation and professionalisation of human resources for the specialisation area

**Rationale behind the choice of the specialisation:**

The "Production of furniture, wood and paper" area is one of the areas which combine the scientific and economic specialisations of the region as well as show innovative and competitive potential. In Wielkopolska, the entire value chain in the industry is represented. In addition, the industry exports a lot, owing to which the companies gain experience in international markets. Strengths of the industry include high quality of products resulting from the use of high-quality raw materials and application of modern production technologies.

On the other hand, challenges faced by furniture producers comprise cooperation with the science sector and customised production, designed to meet specific needs, owing to access to and analysis of information about customers. Wielkopolska has considerable resources allowing it to develop a regional brand, stop copying furniture models, and create an innovative process of designing the entire activity of companies in terms of modern design and adjustment of products and services to evolving needs and lifestyles of customers. However, there are many enterprises that are still unable to carry out planned marketing activities, design appropriate products in line with market trends, and create their own brands. Often, such enterprises supply inexpensive products or "semi-finished products" to chain stores or companies that sell them under their own brands.

**Development vision until 2020:**

The furniture and interior design industry in Wielkopolska has generated brands of innovative and specialist products which are recognisable in the world and which are created on the basis of modern technologies and materials. The comprehensive offer of interior design products meets specific needs of customers. Products from Wielkopolska are characterised by high-class design, which makes them stand out in the market. In 2020, companies from Wielkopolska expanded their offer to include specialist services that meet widely-understood needs of customers – not only in terms of functionality and design of furniture and interiors, but also e.g. utilisation of pieces of furniture that a given customer wants to dispose of in order to change the interior decoration. Many elements necessary for production purposes are obtained within regional value chains, which allows for reduction of costs of deliveries and for precisely adjusting the components, materials and semi-finished products to the needs resulting from advanced production processes.

**Most important directions for the development of the specialisation until 2020**

- Obtaining high value added through marketing and designing.
- Creation of modern design on the basis of on sociological, psychological, and anthropological research as well as research related to ergonomics and materials.
- Creation of specialist offer of interior design products adjusted to the needs of specific target groups.
- Promotion of regional production within the network of links between regional producers and suppliers of raw materials and components.
- Introduction of new materials and technologies into production, including new applications of the existing materials and technologies.
- Development of new materials and technologies as well as using them in production.
- Using the existing technologies and materials in new applications.
- Utilising waste materials and organising the product life cycle.

### **Manner of qualifying beneficiaries and their projects to the specialisation area**

The basic selection of beneficiaries will take place at the level of beneficiaries' PKD [Polish Classification of Activities] divisions. Additionally, each project must undergo a content-related assessment in terms of its correspondence to the above-described specificity of the specialisation area and the areas of inter-industry innovations (p. 3). PKD sections qualified to the area are presented in an appendix to this strategy.

**3. Industry of tomorrow** – Wielkopolska has high concentration of machine production and repair industry, including production and repair of vehicles and means of transport, and in particular of the automotive industry. Aviation and rail industry develops there as well. The region has considerable potential in terms of specialised production as well as science and research in the scope of new technologies and materials which can be used in production of machines and devices. The development of that area covers application of advanced production processes and special processes, backed up by implementation of sustainable production. Within this area, inter alia the following will be developed:

- a) Specialised technologies, machines, devices and their elements for the agricultural and food, interior design, and transport industries
  - New technologies and materials for machines, devices and means of transport, including nano-technologies as well as nano- and mesoscopic materials.
- b) Eco-innovative means of road and air transport as well as public transport vehicles and systems
- c) Automated, sustainable and optimised processes of production as well as of control and monitoring
  - Special processes – inter alia: heat and thermomechanical treatment, plating, welding, forming and powder metallurgy
  - Innovative processes in the chemical industry (catalytic, membrane, low-emission and waste-free processes)
- d) Recycled and recovered materials
- e) Preparation and professionalisation of human resources for the specialisation area

### **Rationale behind the choice of the specialisation:**

Industrial processing plays a key role in economy of Wielkopolska, both in terms of value added and employment. On the one hand, there are very deeply-rooted, traditional industrial processing industries functioning in the region: production and repair of machines, production of cars and transport equipment, metal processing, production of furniture, wood and paper, as well as chemical production. It is evidenced by an analysis of such factors as: growth of employment, growth of sales revenues, activity in international markets, introduction of innovations new to the market as well as outlays on R&D and innovation activities over the last years. On the other hand, there is a considerable scientific and research potential in the region, which to a large extent overlaps with industrial processing when analysing the scientific specialisation of the region. The said potential should be used for transforming the deeply-rooted, traditional industries into the industry of tomorrow as well as for developing the high technology area in that industry.

### **Development vision until 2020:**

In 2020, Wielkopolska is associated with modern industry based on medium and high technologies. Enterprises from that region operate in the international market, offering products of high value added, based on original, innovative technologies. The regional industry creates stable jobs for qualified workforce. Highly-qualified staff both receives education and takes up jobs in the region. Highly reputed employers attract staff from outside the region, too. Industrial installations apply production processes characterised by low emission of pollution and waste and low material intensity of production. Operation of the installations is not burdensome for the environment. The region attracts investments in production installations which apply advanced technologies, carry out their own research activities and cooperate with regional scientific and research units.

### **Most important directions for the development of the specialisation until 2020**

- Development of production of specialist machines,
- Development of production of advanced machines for precision agriculture
- Development of production of advanced means of transport, including for the agricultural and food industry and the interior design industry, as well as of environment friendly means of transport
- Introduction of new materials to production and application, having characteristics and parameters desired by customers
- Research, development and implementation of materials such as thermoplastic composites, bio- and nano-composites, new protective coatings, and natural fibre reinforced thermoplastic composites
- Increasing the use of bio-fuels
- Development of modern material technologies in metal processing.
- Optimisation and improvement of production processes
- Innovation in special processes such as heat and thermomechanical treatment, plating, welding, and metal forming.
- Reducing the emission intensity, material intensity, and energy intensity of production.
- Automation of production and use of remotely-controlled devices

### **Manner of qualifying beneficiaries and their projects to the specialisation area**

The basic selection of beneficiaries will take place at the level of beneficiaries' PKD [Polish Classification of Activities] divisions. Additionally, each project must undergo a content-related assessment in terms of its correspondence to the above-described specificity of the specialisation area and the areas of inter-industry innovations (p. 3). PKD sections qualified to the area are presented in an appendix to this strategy.

**4. Specialised logistics processes** – logistics, transport and warehouse management are one of the strengths of Wielkopolska, whereas the development of the logistics industry is based on favourable location of the region which increases its investment attractiveness. The *Specialised logistics processes* area concentrates on using the said potential for the development of specialised logistics services and products and of sustainable supply chains that improve the level of business customer service, and also of logistics processes that support regional mobility and, as a consequence, the quality of life of inhabitants of the region. The development of the area covers both the technical measures and the development of human resources and of organisation and management methods, in

particular in the scope that supports the development of the other specialisations of the region towards increasing its value added in business and improving the quality of life of citizens. Within this area, inter alia the following will be developed:

- a) specialist logistics solutions for the needs of SMEs and multi-channel commerce (including e-commerce)
  - specialised supply chains (including tracing, management and consolidation of cargo as well as electronisation of supply chains)
  - logistics outsourcing based on the logistics potential of the region in the regional, domestic and international markets
- b) services, technologies and products for logistics (including the technologies of formation and consolidation of cargo units)
  - innovative materials for transport and logistics (such as polymers and composites for cargo compartments)
- c) engineering and computerisation of logistics processes
  - tools for optimising and supporting decisions in logistics processes
  - sensors and geo-location, logistics data exchange platforms
- d) multi-modal transport for increased regional mobility
- e) preparation and professionalisation of human resources for the specialisation area

#### **Rationale behind the choice of the specialisation:**

Transport and warehouse management is one of the areas which combine the scientific and economic specialisations of the region as well as shows innovative and competitive potential. The transport industry in Wielkopolska is very fragmented. Depending on the size of a given transport company, its needs, objectives and customers change as well. A company that has a fleet of a few dozens of vehicles at its disposal becomes a major partner of producers, in fact taking over part of their activities related to logistics and transport to recipients. In addition, such a company has the potential to absorb advanced ICT solutions and to negotiate fuel prices (in a limited scope) as well as terms and conditions of servicing of the means of transport. However, the major part of the market is represented by micro-companies that do not require sophisticated tools for managing a fleet of one or few vehicles and that operate on the basis of single orders, without a guarantee of continuity of such orders. At present, some transport companies are at a stage when they consider consolidation and establishing of cooperation. At the same time, the development of such companies is concentrated on expanding the services offered to include other services, however related to transport only, such as construction of storage facilities and establishing of logistics centres. Such services are closely connected with IT and communication technologies, in particular as regard geo-location. Additionally, logistics companies look for technologies which will allow them to reduce costs of transport by reducing the weight of means of transport and by increasing their durability, including increasing their cargo capacity, e.g. owing to the use of new materials or new applications of the existing technologies and materials in transport.

#### **Development vision until 2020:**

In 2020, the logistics industry in Wielkopolska provides comprehensive logistics services which meet the specific needs of production and service companies in the region. Specialised logistics services which meet the needs of specific industries develop at a particularly high rate. New solutions and technologies are introduced, which are based on the use of innovative materials, both in terms of formation of cargo units and in terms of information flow and

management of logistics chains. Application of modern technologies in logistics processes is aimed at their optimisation and protection of natural environment.

### **Most important directions for the development of the specialisation until 2020**

- Development of outsourcing of logistics services aimed at improving the competitiveness of production and service companies in the region.
- Optimisation of logistics processes in production and service companies, in particular in the specialisation areas of the region.
- Integration and specialisation of companies from the logistics industry as well as implementation of state-of-the-art technologies in response to needs of their customers.
- Cooperation as well as combination and optimal utilisation of resources with the use of modern ICT systems and other technologies in accordance with requirements of customers of logistics companies.

### **Manner of qualifying beneficiaries and their projects to the specialisation area**

The basic selection of beneficiaries will take place at the level of beneficiaries' PKD [Polish Classification of Activities] divisions. Additionally, each project must undergo a content-related assessment in terms of its correspondence to the above-described specificity of the specialisation area and the areas of inter-industry innovations (p. 3). PKD sections qualified to the area are presented in an appendix to this strategy.

**5. ICT-based development** – ICT industry in Wielkopolska develops well, showing potential both in terms of production of computers and electronic products, information and communication technologies, and in terms of automated systems for business. The *ICT-based development* area comprises two fields: technologies for innovative communities and business applications of ICT. The first one is to serve the development of smart environment in private and public spheres. From among technologies for innovative communities, worth mentioning are integrated systems of public services, e.g. smart transport, energy, and lighting systems based on Big Data, data management systems, and embedded systems, as well as activities in the area of Smart City. Business applications of ICT refer, in particular, to specialised IT products and services that support the development of the other specialisations of the region. Within this area, inter alia the following will be developed:

- a) ICT applications, services and systems aimed at improving the quality of life
  - integrated systems of public services (e.g. smart transport, energy, lighting, and waste management systems based on Big Data, data management systems; activities in the area of Smart City)
  - applications and devices improving the quality of life of individual citizens, including mobile applications
  - new applications and dedicated ICT products for innovative communities
  - public e-services, including e-administration, e-culture, e-health, and e-education
- b) advanced systems for business
  - prototyping of modern solutions with the use of ICT
- c) specialist ICT tools and products for specialisation areas of the region
- d) IT systems intended for management of complex infrastructure, embedded systems for infrastructure

e) preparation and professionalisation of human resources for the specialisation area

**Rationale behind the choice of the specialisation:**

The ICT industry in Wielkopolska develops dynamically, creating brands recognisable in the domestic market but also, more and more frequently, in international markets. However, the industry is fragmented, and the majority of enterprises has small human and financial potential that allows for the development of innovative projects. In addition, current needs and awareness of customers do not force the industry to generate substantially new solutions. One of the opportunities for the industry is to generate repeatable, highly specialist IT products which can be sold in international markets. Due to demand for IT products also in the public sphere and among individual citizens, it is necessary to develop IT products that improve management and provision of public services and of individual services for citizens. Such solutions should respond to the challenge related to the still low level of computerisation of the region, both among its inhabitants and in the sector of enterprises. An important factor for the development of the industry is also the concentration of higher education institutions providing education for the needs of the industry, although the demand for employees in the sector is still very high.

**Development vision until 2020:**

In 2020, the ICT industry in Wielkopolska has a clear specialisation and generates products which are sold also in international markets. Many enterprises from the region, in particular the ones from the area of the other specialisations of the region, take advantage of advanced IT solutions, which contributes to greater efficiency of production. The industry generates also systems for management of public services as well as applications and products which improve the quality of life. Numerous new solutions appear there as well, which are of importance for the domestic market, but also build their own brand abroad.

**Most important directions for the development of the specialisation until 2020**

- Development of technologies for public services, taking advantage of the most recent trends in ICT
- Development of infrastructure (high-speed Internet, connections) and technologies (data security, traceability, privacy) for security of data exchange and mass analysis of data of the Big Data type
- Development of technologies for the energy industry and public services
- Development of IT products and services for health care and telemedicine
- Development of specialist IT products and advanced systems for business
- Development of specialist IT tools and applications for the agricultural and food industry
- Development of specialist IT tools and applications for the furniture and interior design industry
- Development of specialist IT tools and applications for the transport and logistics industry
- Development of specialist IT tools and applications for the machine and industrial processes industry

### **Manner of qualifying beneficiaries and their projects to the specialisation area**

The basic selection of beneficiaries will take place at the level of beneficiaries' PKD [Polish Classification of Activities] divisions. Additionally, each project must undergo a content-related assessment in terms of its correspondence to the above-described specificity of the specialisation area and the areas of inter-industry innovations (p. 3). PKD sections qualified to the area are presented in an appendix to this strategy.

### **2. Quality of life – The areas resulting from the challenges faced by Wielkopolska, covering modern technologies, services and products which are human-friendly and improve the quality of life, based on emerging sectors and the evolving scientific potential**

**6. Modern medical technologies** – the slow ageing of society and increasingly frequent lifestyle diseases observed also in Wielkopolska require the development of new technologies in the area of medicine, pharmacy as well as health care and prevention. The *Modern medical technologies* area covers new technologies helpful in fighting rare and lifestyle diseases, such as cardiovascular diseases, nervous system diseases and cancer, as well as pharmaceutical technologies with a potential for commercialisation and responding to the demand from enterprises. Within this area, inter alia the following will be developed:

- a) Personalised medicine
- b) Products, services and new technologies related to prevention, diagnostics and treatment of lifestyle diseases and rare diseases
- c) New methods that support diagnostic decisions and treatment with the use of ICT and Big Data

### **Rationale behind the choice of the specialisation:**

Wielkopolska must respond to major social challenges connected with ageing society and lifestyle diseases. In the area of health care, the region may use the existing potential, including the strong scientific base in the field of health sciences, connected with functioning of the medical university and other scientific units. Poznań is a significant educational centre, owing to which the region has the largest number of English-speaking students in the country. The economic potential is developing in the region as well, e.g. there are approx. 60 pharmaceutical companies, the majority of which are small and medium enterprises. In addition, the region is the location of global-scale innovative projects related to diagnostics of rare and lifestyle diseases, development of molecular tests for diagnostics purposes, as well as the largest registry of motor system diseases and birth defects in Europe, with potential for the development of diagnostic tests. Moreover, Wielkopolska is an important oncology centre due to its health care infrastructure, treatments provided as well as research and implementation works related to, inter alia, development of vaccines. Although the works conducted have a considerable potential for commercialisation, in the years to come the region will have to face the barrier caused by Poland's weak image in the health care sector in international markets. Further development of the research infrastructure will be necessary, just as better utilisation of the existing infrastructure as well as foundation and development of enterprises based on knowledge and technologies.

### **Development vision until 2020:**

In 2020, inhabitants of Wielkopolska have access to health care services at a level comparable

to EU developed countries, in particular in the field of modern diagnostic solutions and treatments. Inhabitants of Wielkopolska are aware of the importance of prevention as well as use products and services that ensure maintaining of good health condition at a level comparable with the average in EU developed countries, i.e. they monitor their health condition and take advantage of modern methods of molecular diagnostics, buy healthy food products, follow an appropriate diet as well as use the sports, rehabilitation and recreational infrastructure. Products and services based on unique solutions from Wielkopolska function in the international market. In the region, there develop companies that are competitive at least on the European scale as regards health care, as well as new enterprises emerge dynamically in the high-tech sector.

### **Most important directions for the development of the specialisation until 2020**

- Creation and development of innovative health care technologies, products and services.
- Creation and development of medical Big Data banks to be used for development of diagnostic tests and e-learning materials
- Development of new forms of geriatric and paediatric medicines;
- Introduction of innovative methods of medicine testing that allow for introduction of medicines into the market in a quicker and less expensive manner.
- Improving the competitiveness of regional entities as regards health care in domestic and international markets
- Development of international services of biobanks.
- Development of personalised medicine, based on molecular diagnostics and targeted therapy
- Development of services connected with prevention, diagnostics, risk assessment, monitoring and treatment of lifestyle diseases
- Development of new companies functioning in global markets, offering research and development services in the field of neuroimaging
- Stimulating the foundation of new companies in the field of health care as well as improving the competitiveness of the existing ones.
- Application of modern solutions in public services.
- Development of services in the field of e-health.
- Development of modern infrastructure and implementation of solutions in cooperation with regional entities within public sector institutions.

### **Manner of qualifying beneficiaries and their projects to the specialisation area**

The basic selection of beneficiaries will take place at the level of beneficiaries' PKD [Polish Classification of Activities] divisions. Additionally, each project must undergo a content-related assessment in terms of its correspondence to the above-described specificity of the specialisation area and the areas of inter-industry innovations (p. 3). PKD sections qualified to the area are presented in an appendix to this strategy.

### **3. Areas of inter-industry innovations – numerous innovations as well as new industries and economic sectors are created at the interface between the existing specialisation**

**areas. Investments in such interface areas may lead to considerable innovation, create synergies and bring the greatest benefits for the development of the region's economy.**

In accordance with the *related variety* methodology (recommended in the guidebook of the European Commission), Table 22 presents the inter-industry connections which show the critical mass in the region. The directions of horizontal activities agreed upon for each of the specialisation areas are presented within strategic programmes further in the document.

Table 1 Areas of inter-industry innovations

<b>Offers</b> <b>Gains</b>	<b>Bio-based raw materials and food for informed consumers</b>	<b>Interiors of the future</b>	<b>Industry of tomorrow</b>	<b>ICT-based development</b>	<b>Specialised logistic processes</b>
<b>Bio-based raw materials and food for informed consumers</b>		<ul style="list-style-type: none"> <li>Wooden and cardboard packaging</li> <li>Design</li> <li>Food design</li> </ul>	<ul style="list-style-type: none"> <li>Specialised agricultural machinery</li> <li>Specialised processing machinery</li> <li>Automation of production</li> <li>Internal transport</li> <li>Preserving nutritional values in production processes</li> </ul>	<ul style="list-style-type: none"> <li>E-commerce</li> <li>Production management</li> <li>E-certificates</li> <li>Data processing</li> <li>Cooperation between IT and SMEs</li> <li>Traceability systems</li> <li>Specialised software for the industry</li> </ul>	<ul style="list-style-type: none"> <li>Transport conditions: temperature, humidity</li> <li>Delivery dates</li> <li>Shared logistics centres of SMEs</li> <li>Outsourcing of transport services</li> <li>Specialist logistics solutions for the industry</li> <li>Optimisation of logistics decisions and processes</li> </ul>
<b>Interiors of the future</b>	<ul style="list-style-type: none"> <li>Customers: catering and hospitality sector</li> <li>Bio-materials</li> </ul>		<ul style="list-style-type: none"> <li>Metal elements for furniture</li> <li>Specialised machinery and devices</li> <li>Instrumentation</li> <li>Extending the useful life of machinery</li> <li>Automation of production</li> <li>Internal transport</li> </ul>	<ul style="list-style-type: none"> <li>Specialised software for the industry</li> <li>E-commerce</li> <li>Production management</li> <li>Data processing</li> <li>Data logistics</li> </ul>	<ul style="list-style-type: none"> <li>Transport of wood, including round wood, sawn wood and semi-finished wood products</li> <li>Container transport of furniture</li> <li>Optimisation of logistics decisions and processes</li> <li>Specialist logistics solutions for the industry</li> </ul>
<b>Industry of tomorrow</b>	<ul style="list-style-type: none"> <li>Participation in market research, cooperation and prototyping of new machines and production methods</li> </ul>	<ul style="list-style-type: none"> <li>Design and ergonomics of machines</li> <li>R&amp;D processes</li> <li>Wooden elements for production of machines</li> <li>Participation in market research, cooperation and prototyping</li> </ul>		<ul style="list-style-type: none"> <li>Specialised software for the industry</li> <li>Customer relation management</li> <li>Embedded systems</li> <li>Automated systems for business</li> </ul>	<ul style="list-style-type: none"> <li>Transport, including internal transport</li> <li>Logistics and warehousing</li> <li>Optimisation of logistics decisions and processes</li> <li>Specialist logistics solutions for the industry</li> </ul>
<b>ICT-based development</b>	<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Prototyping of modern solutions with the use of ICT</li> <li>Cooperation, prototyping and testing of new solutions that allow for increasing the scale of production</li> <li>Smart agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Prototyping of modern solutions with the use of ICT</li> <li>Cooperation, prototyping and testing of new solutions that allow for increasing the scale of production</li> </ul>	<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Prototyping of modern solutions with the use of ICT</li> <li>Cooperation, prototyping and testing of new solutions that allow for increasing the scale of production</li> </ul>		<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Prototyping of modern solutions with the use of ICT</li> <li>Cooperation, prototyping and testing of new solutions that allow for increasing the scale of production</li> <li>Specialist logistics solutions for the e-commerce industry</li> </ul>
<b>Specialised logistic processes</b>	<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Cooperation, prototyping and testing of new solutions</li> </ul>	<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Cooperation, prototyping and testing of new solutions</li> </ul>	<ul style="list-style-type: none"> <li>Data about specific needs and processes in the industry</li> <li>Cooperation, prototyping and testing of new solutions</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring and control of traffic</li> <li>Systems for optimisation of logistics decisions and processes</li> <li>Sensors, geo-location, logistics data exchange platforms</li> </ul>	
<b>Modern medical technologies</b>	<ul style="list-style-type: none"> <li>Nutritional prevention products</li> <li>Medical bio-materials</li> </ul>	<ul style="list-style-type: none"> <li>Hospital furniture</li> <li>Interiors and furniture for persons with special health needs</li> </ul>	<ul style="list-style-type: none"> <li>Specialised devices and tools for applied medicine and pharmacy</li> </ul>	<ul style="list-style-type: none"> <li>ICT in health care</li> <li>Telemedicine and telecare</li> <li>Support of diagnostics and treatment decisions with the use of Big Data</li> <li>Management of large sets of protected data</li> </ul>	

Source: Authors' own elaboration based on results of workshops

