The methodology of scenario construction based on triangulation concept

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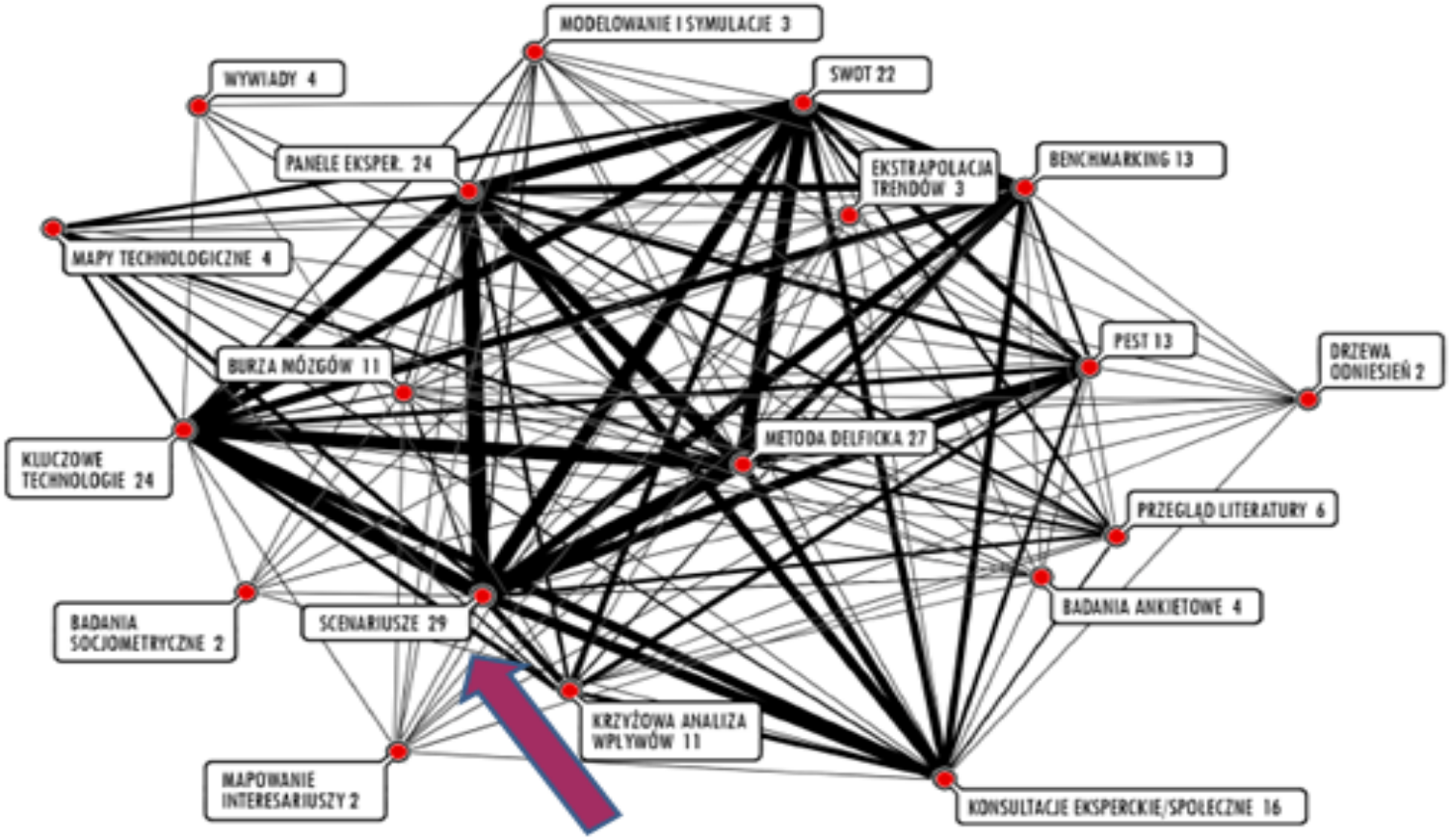
Agenda

1. Introduction
2. Scenario method in Polish foresight initiatives
3. The methodology of scenario method construction
4. The application of methodology in *NT for Podlaskie 2020. Regional strategy of nanotechnology development.*

Introduction

Polish National Foresight Program „Poland 2020”

Rationales


MODELOWANIE I SYMULACJE 3
WYWIADY 4
SWOT 22
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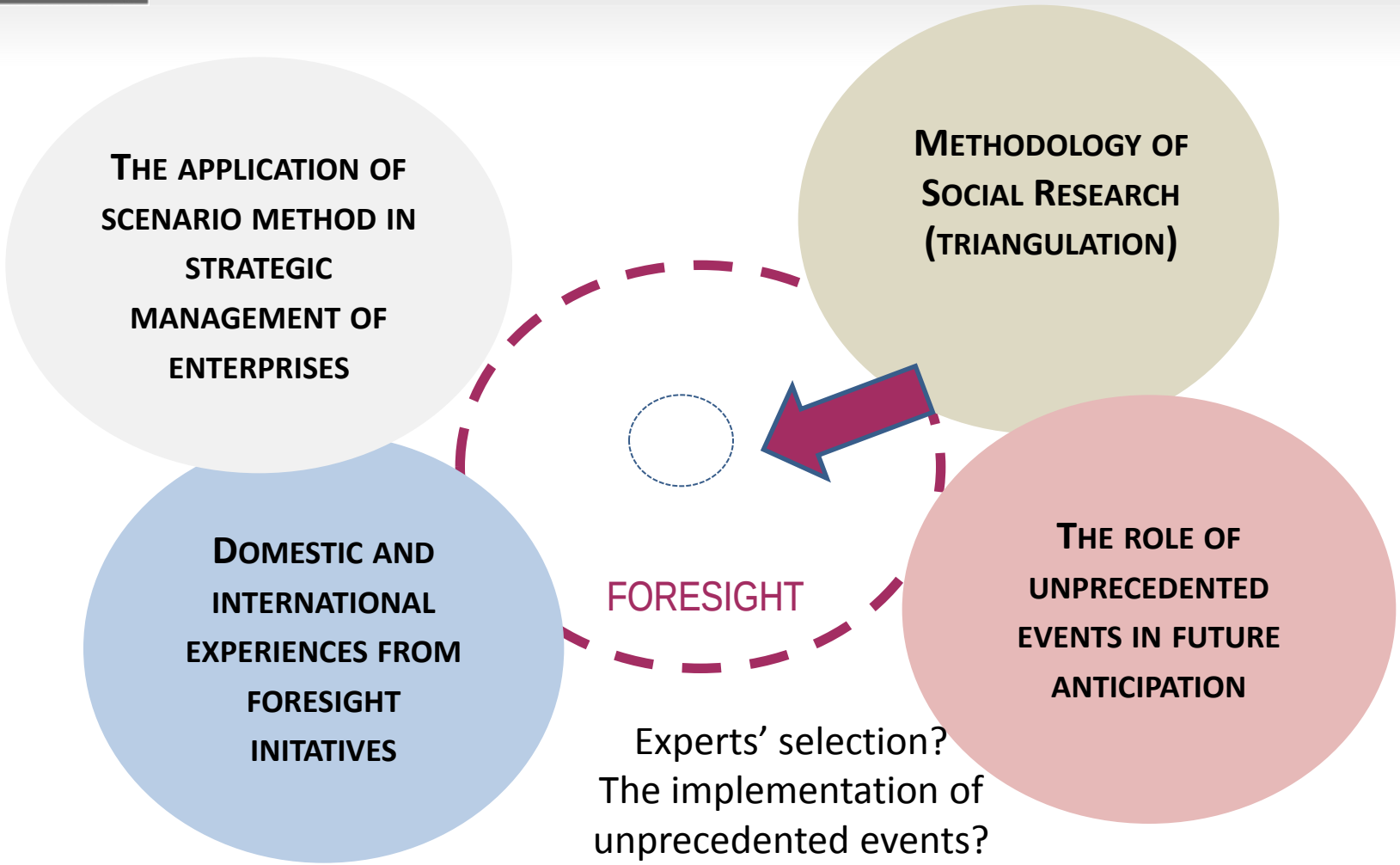
Knowledge gap

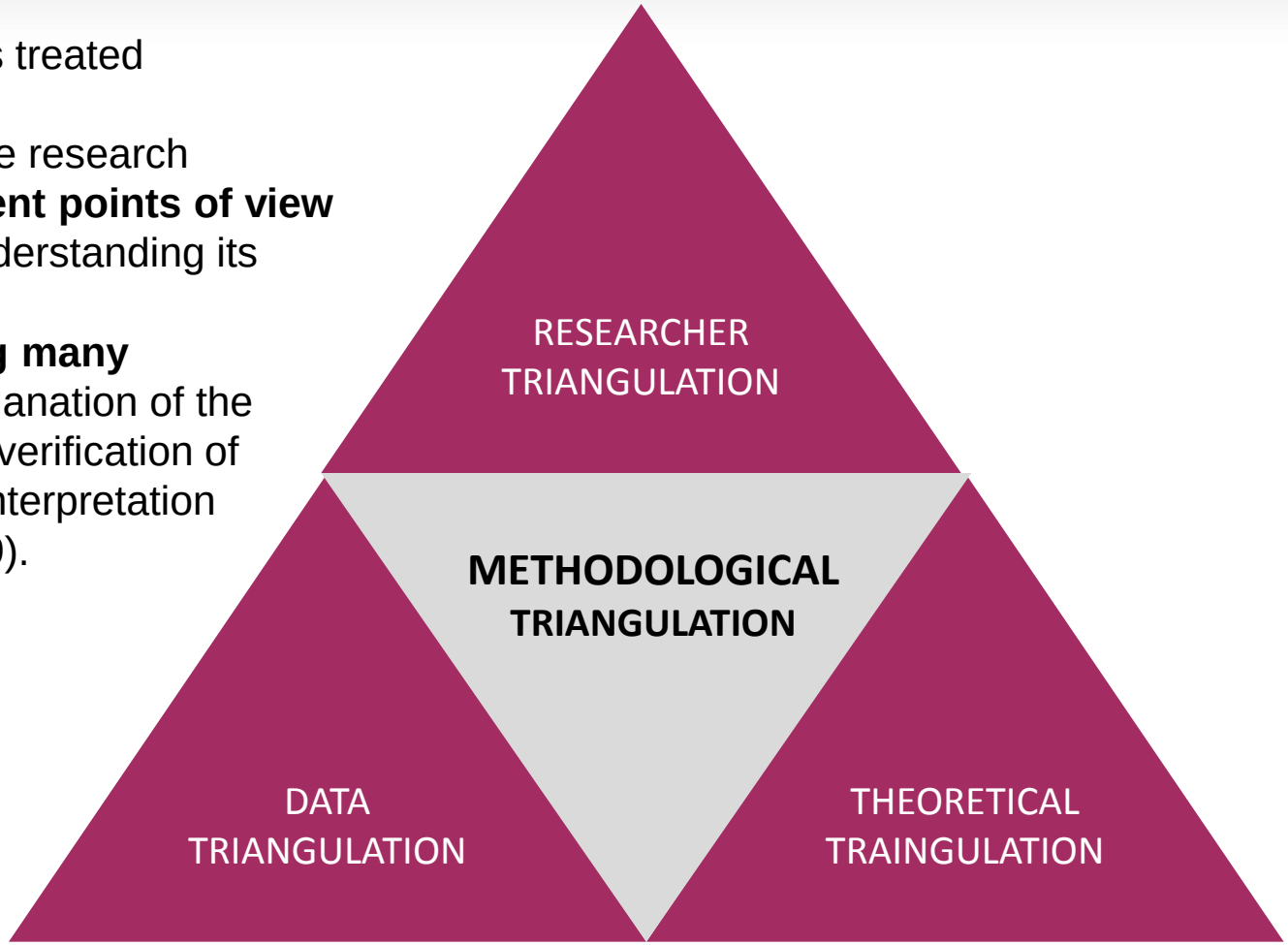


Experts' selection?
The implementation of unprecedented events?

Triangulation

the term in social sciences is treated metaphorically -

1) **as an assessment** of the research phenomena **form different points of view** with the aim of better understanding its variety (Stake 2009)
2) as a process of **applying many perspectives** to the explanation of the phenomenon and to the verification of a given observation of interpretation repeatability (Stake 2009).



Common elements

triangulation

foresight studies

scenario method

engaging experts of diverse professions, gender, age, professional field and place of origin in the research

engaging diverse stakeholder groups

(i) change in the perception of the world
(ii) diversification in outlook on the world
(in scenario method authors and recipients)

Researcher triangulation

GI Establishing the diversity degree of experts' professions

GII Establishing the percentage of each expert occupational group

G III Establishing the percentage of women

G IV Establishing the percentage of experts under 35 years age

Source: http://www.teknat.umu.se/english/research/young-researcher-award/

Who do we need? What should be the structure of experts? → determined by the research goal

Theoretical and data triangulation

GV Establishing the catalogue of academic disciplines

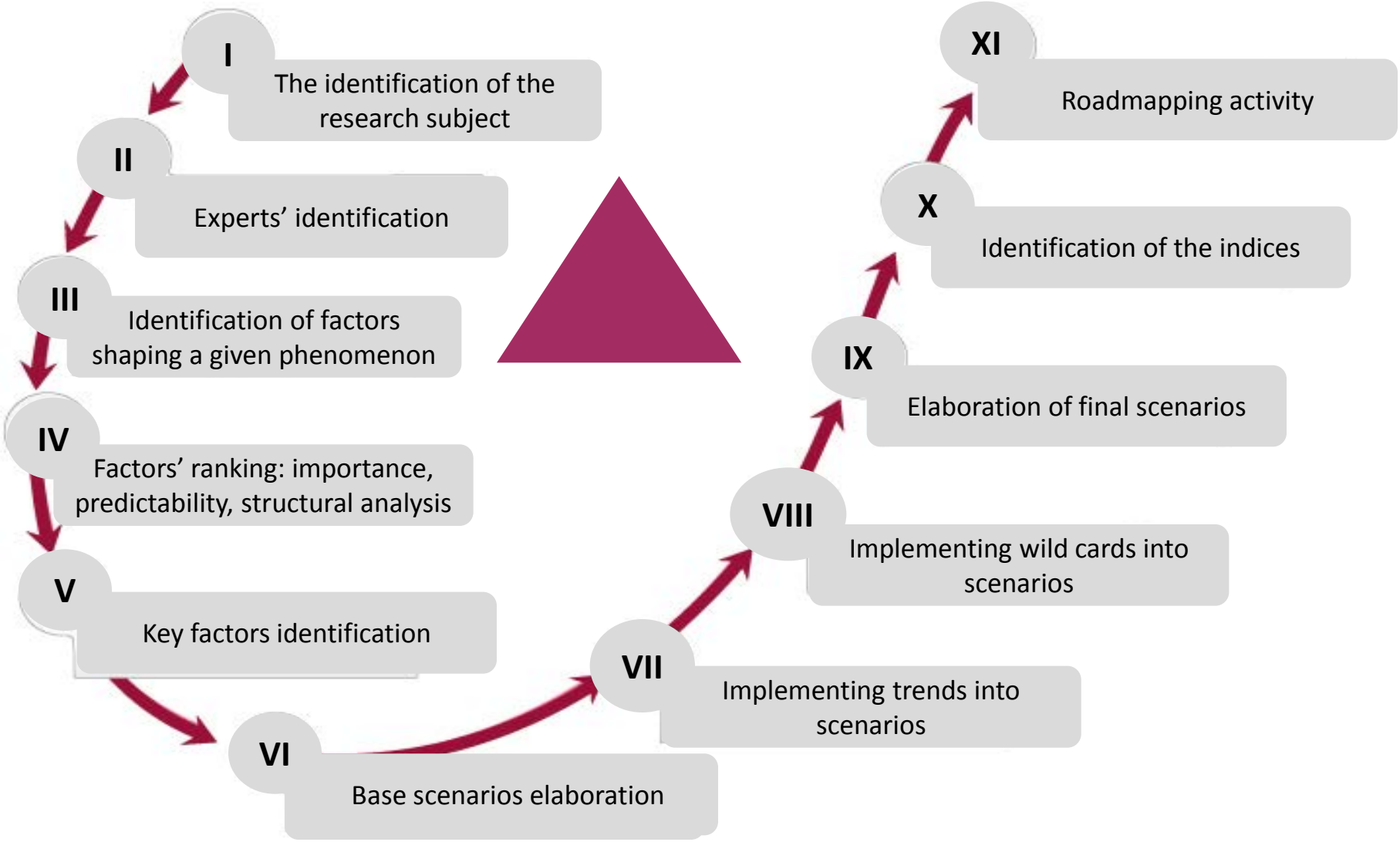
GVI Establishing experts' places of origins

G VII Establishing the description sources of factors influencing a phenomenon

G VIII Establishing the manner of work organization for the scenario method

G IX Establishing the time period after which information verification will take place about factors which shape phenomena

Referential methodology of scenario construction



NT FOR PODLASKIE 2020. Regional strategy of nanotechnology development

EU Operational Program „Innovative Economy 2007-2013

Priority I. Research and development of new technologies

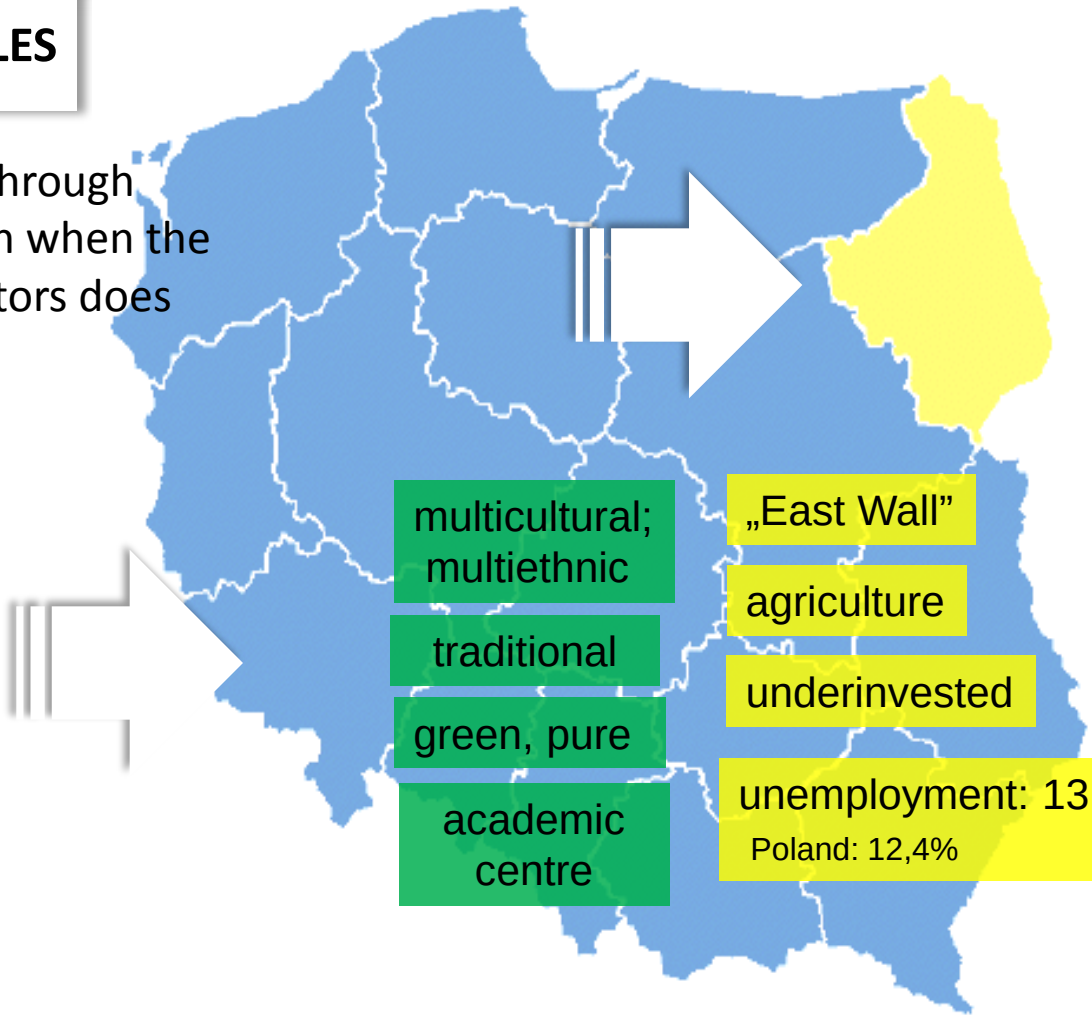
Measure 1.1. Support for scientific research for the building of knowledge based economy

Sub-measure 1.1.1. Research projects with the use of foresight method

Organizer: Bialystok University of Technology

RATIONALES

The project is an attempt of breakthrough technologies promotion in situation when the development of the traditional sectors does not accelerate the region growth.



Goals

- elaborating a strategy of nanotechnology development in Podlaskie province till 2020
- identifying and mapping critical nanotechnologies up to 2020
- identifying the most important factors influencing the development of nanotechnologies
- putting forward scenarios of nanotechnology development
- stimulating the process of regional vision building between the key stakeholders

Methodology

bibliometrics

STEEPVL

SWOT

Technology mapping

Key technologies

Scenario method

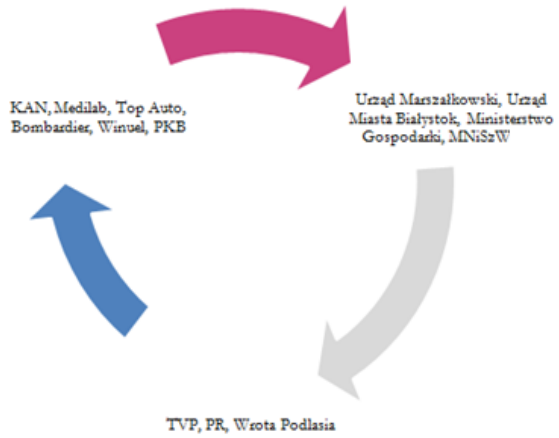
Technology roadmapping

Nanotechnology Development Strategy

brainstorming

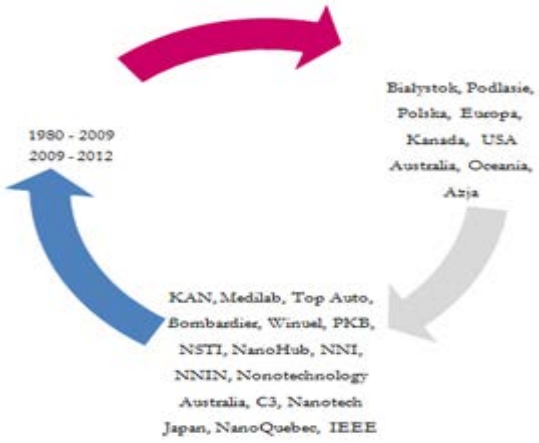
moderated discussions

Triangulation in the project



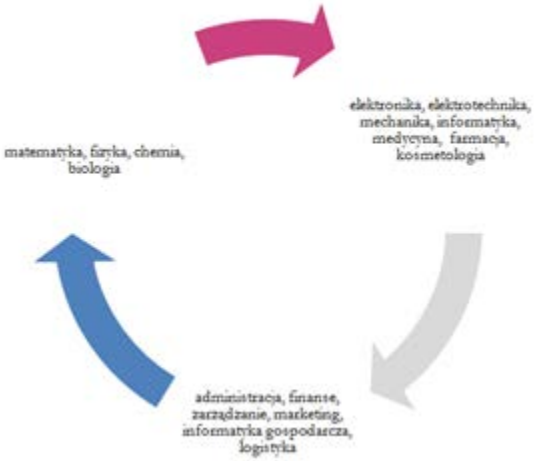
Researcher triangulation

different professional background, sex, age, *esp.* women and young people (under 35), about 40%



Data triangulation

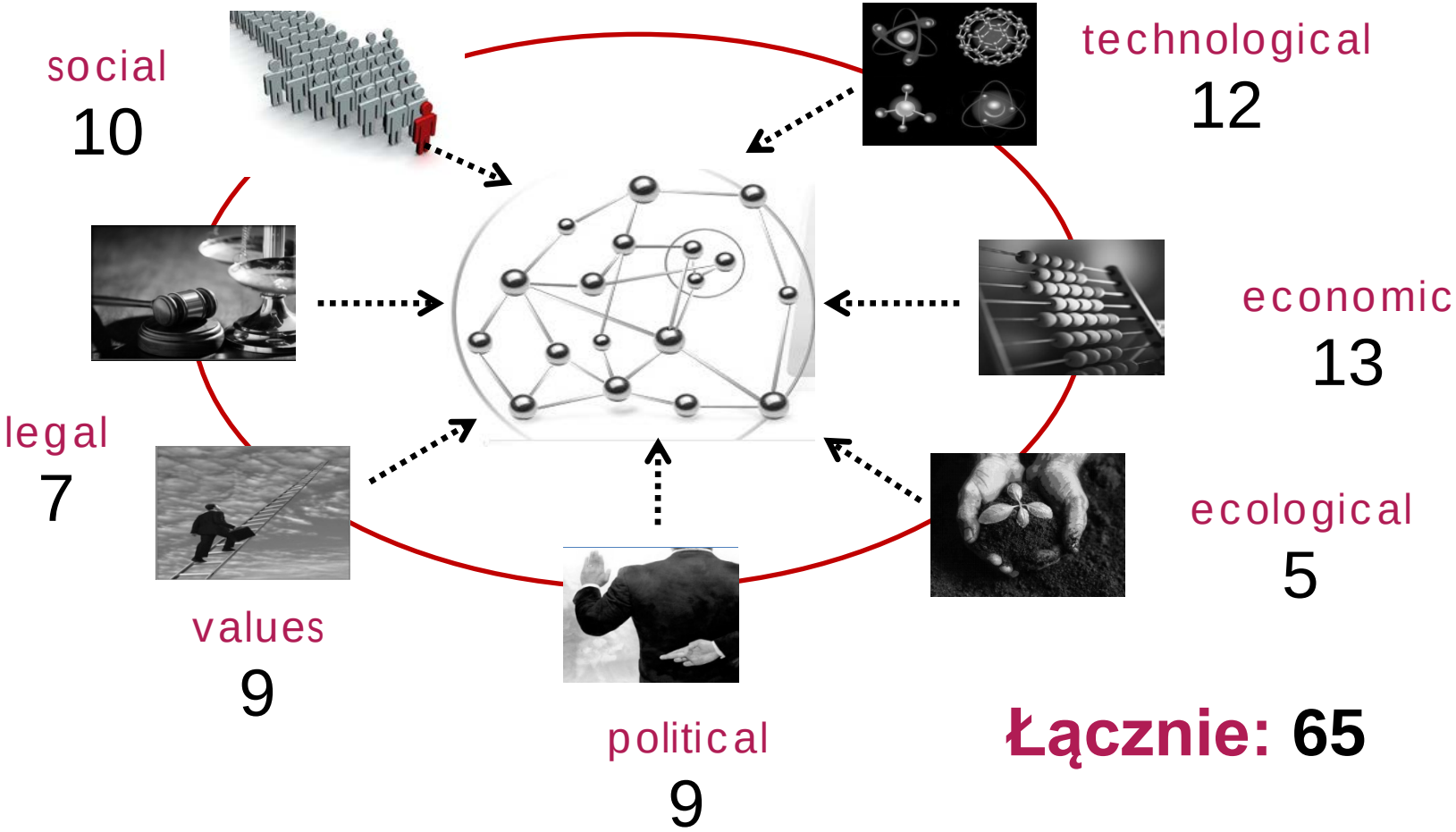
experts from different institutions and places of origin, information from variety of works



Theoretical triangulation

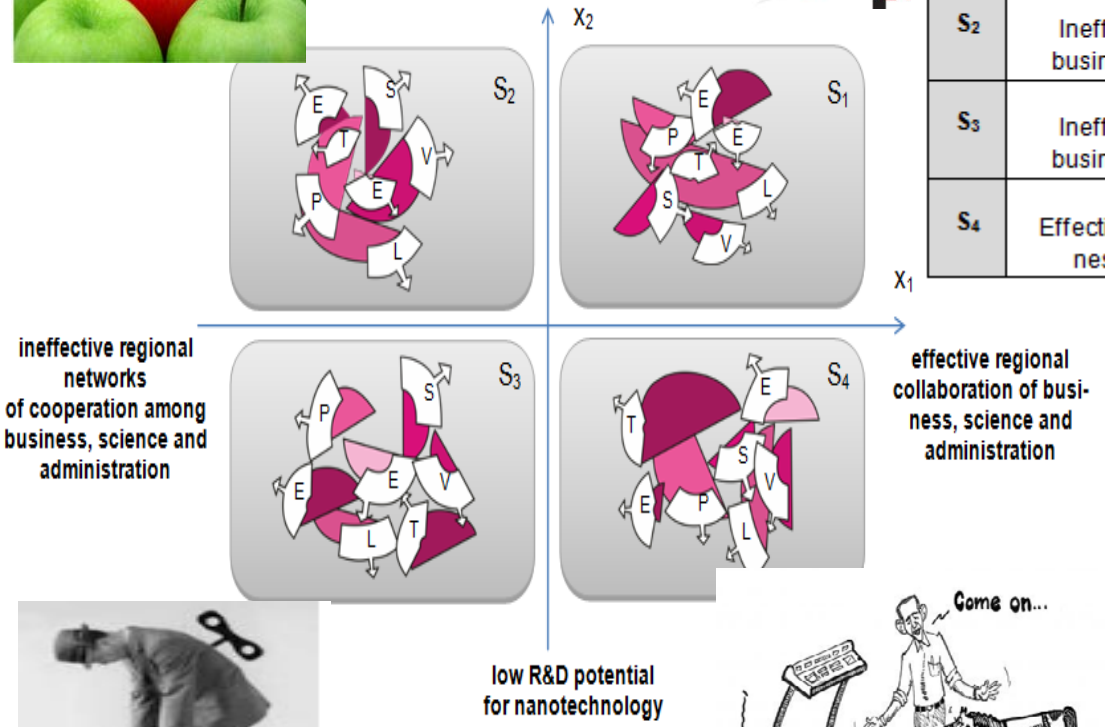
experts from different scientific fields

Findings



Łącznie: 65

Findings

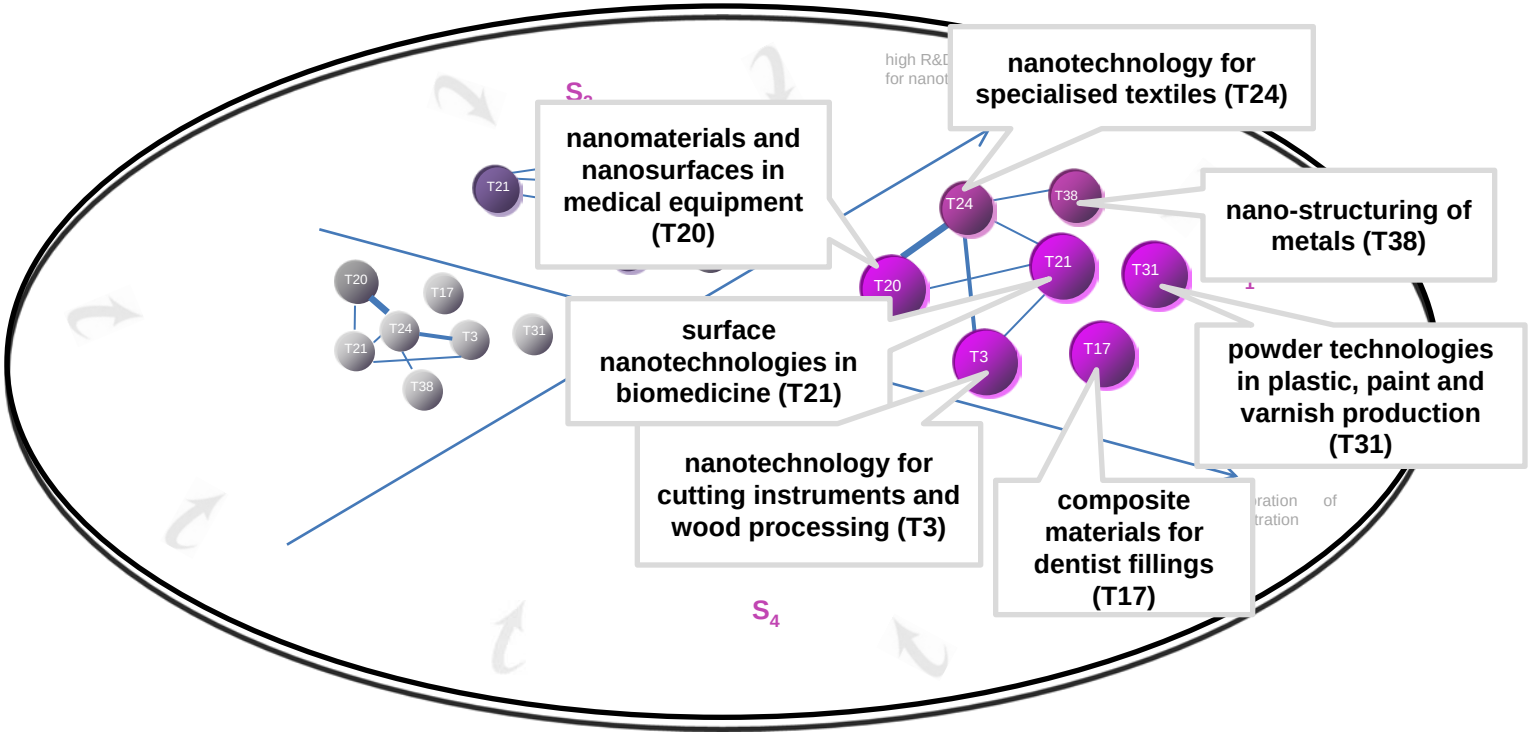


	Scenario profile	Scenario name
S_1	High R&D Effective regional collaboration of business, science and administration	NANO: New Dimension of Podlaskie
S_2	High R&D Ineffective regional collaboration of business, science and administration	NANO-Scattered Podlaskie
S_3	Low R&D Ineffective regional collaboration of business, science and administration	NANO-Indifference in Podlaskie
S_4	Low R&D Effective regional collaboration of business, science and administration	NANO-Enthustic Podlaskie

- technological progress,
- ageing population,
- increasing importance of alternative energy sources,
- intensified activity of the states in the realm of security,
- new patterns of social inequality,
- shaping of the new economy, globalization

Findings

PRIORITY TECHNOLOGY GROUPS



very high | high | average | low | very low

Conclusions

1. Expert selection manner for foresight research should convey the specificity of this type of research expressed mainly in expert diversity, not only in terms of their professions, but also in terms of the demographics.

2. Practice proves that fulfilment of those principles might appear extraordinarily difficult, often due to the lack of experts in a given field in agreement with the adopted criterion.

3. Incorporating triangulation principle into scenario method seem to enhance the validity of future anticipation.

Thank you for your attention!