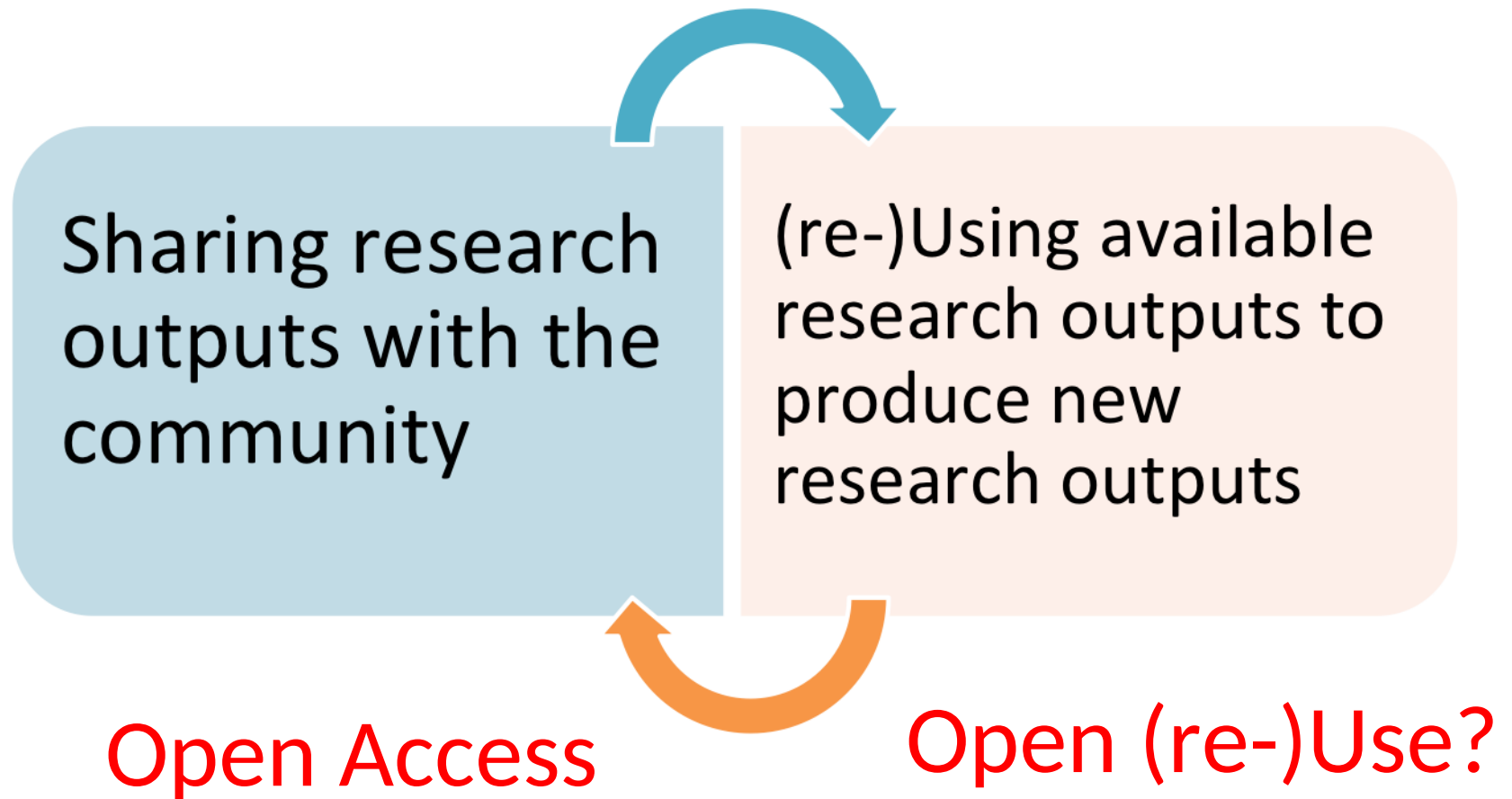# A Challenge of Research Outputs in GL Circuit:
From Open Access to Open Use

Sergey Parinov, Central Economics an Mathematics Institute of RAS (Moscow);
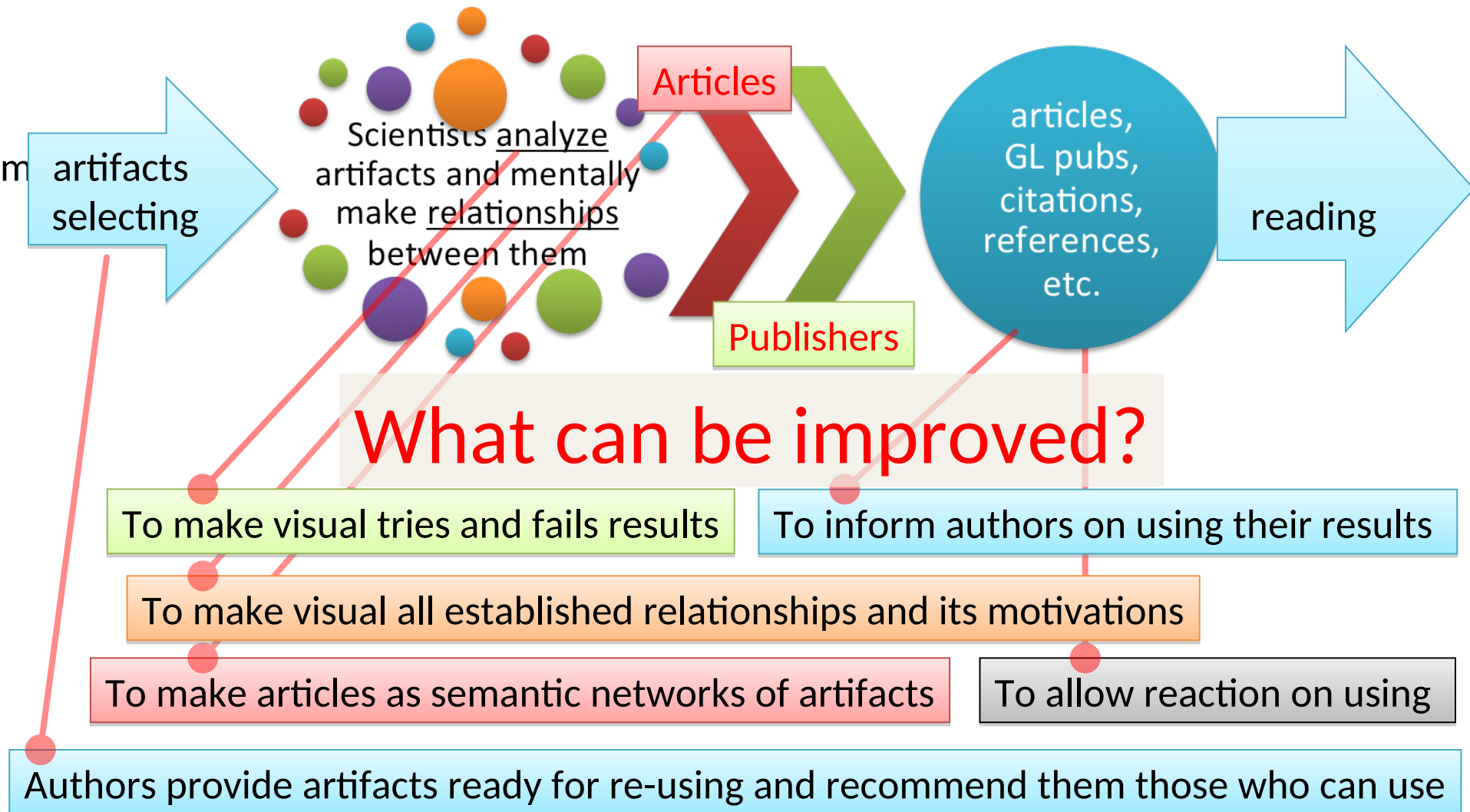
Mikhail Kogalovsky, Market Economy Institute of RAS (Moscow);

Victor Lyapunov, Institute of Economics and Industrial Engineering of Siberian Branch of RAS (Novosibirsk)

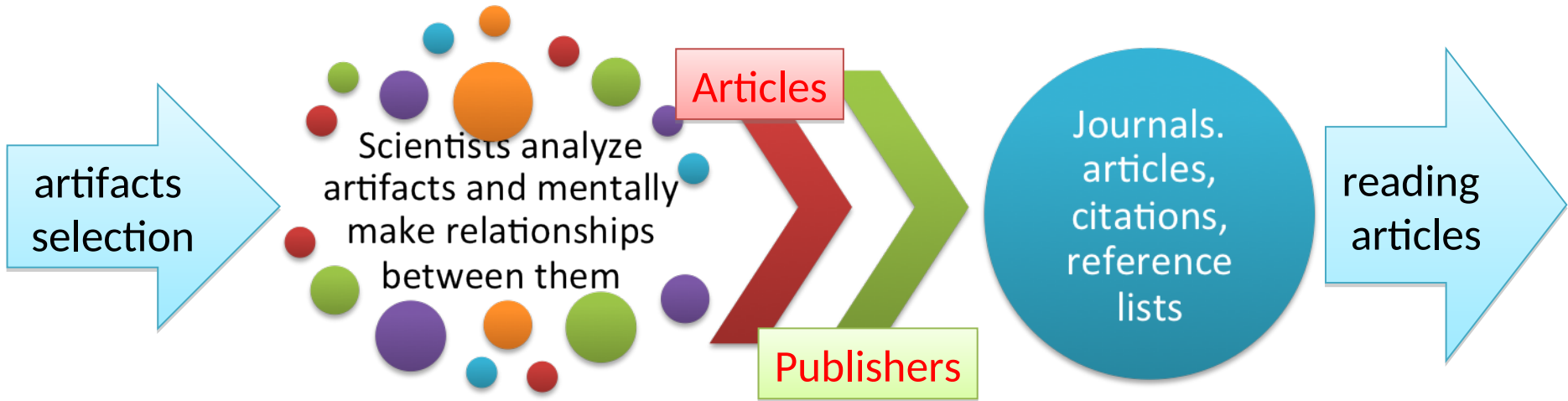# GL circuit for research outputs

Traditional technology to re-use research outputs

artifacts selecting

Scientists analyze artifacts and mentally make relationships between them

Articles

Publishers

articles, GL pubs, citations, references, etc.

reading

What can be improved?

To make visual tries and fails results

To inform authors on using their results

To make visual all established relationships and its motivations

To make articles as semantic networks of artifacts

To allow reaction on using

Authors provide artifacts ready for re-using and recommend them those who can use

How it can be improved?

what scientists do	create & deposit	visualize re-using	awareness about re-use	global cooperation
Traditional Science	articles, papers, reports, etc.	by citing available articles, books, etc.	few data about citations and its motivations	weak
Open Re-Use	reusable artifacts	making relationships and collecting data about tries and fails	immediate signals on by whom/how the artifacts were re-used	a strong form based on notifications about re-use and open scientometrics

Traditional re-use technology

artifacts selection → Scientists analyze artifacts and mentally make relationships between them → **Articles** / **Publishers** → Journals. articles, citations, reference lists → reading articles
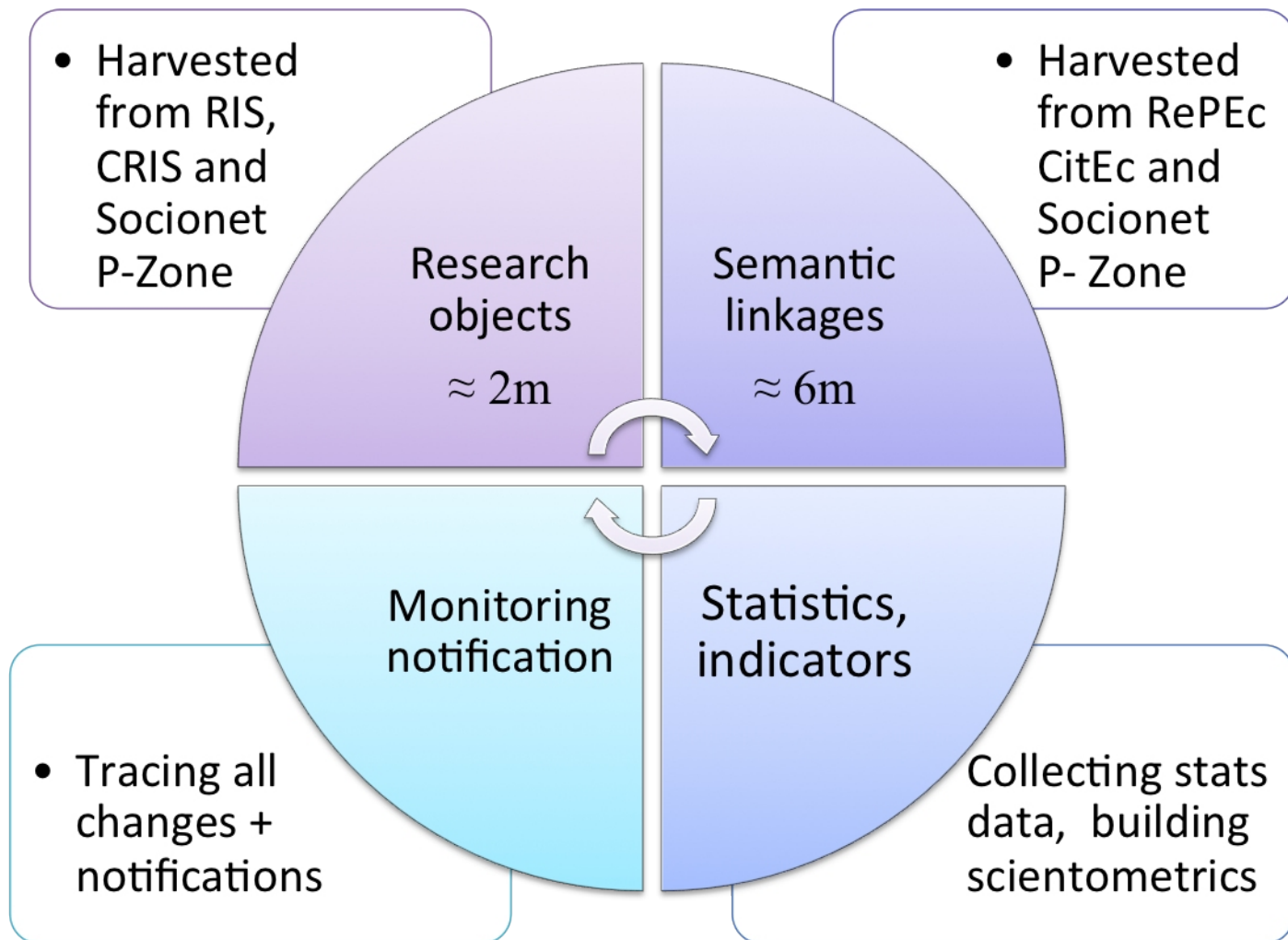

New open re-use technology

1. Tools to register RO in more reusable forms, e.g. like micro-pub, nano-artifacts	2. Tools to express research relationships between artifacts, including tries/fails data and motivations to use them	3. Services to make immediate notifications about using your artifacts with it	4. Services to collect statistics, process it and update usage "portraits" of RO, scientists and organizations

Socionet.ru is CRIS driven by scientific community

- Harvested from RIS, CRIS and Socionet P-Zone

- Harvested from RePEc CitEc and Socionet P- Zone

Research objects

≈ 2m

Semantic linkages

≈ 6m

Monitoring notification

Statistics, indicators

- Tracing all changes + notifications

Collecting stats data, building scientometrics

Open (re-)Use technology:
1st component

- Socionet gives scientists a tool to make fragmentation of traditional papers and deposit research outputs in more reusable forms than traditional one (similar with micro-publications and nano-publication approaches)

"Artifact" data type

Discipline: экономика		135181
10	Chapters and Sections in Books	17190
8	Organizations Data	122
9	Theses and Abstracts	229
48	Collection of Books	40927
10	Scientific News	
1	Scientific Objects-for-reuse	
4	Scientific Reviews and Comments	
16	Personal Data of RePEc Authors	
2	Collection of Selected Publications	
1	Software for Research	
54	Collection of Journal Articles	
70	Working Papers	
1	Research Results	

Services:

Title of artifact	Слабые места научных информационных систем для оценки результативности исследований
Full text	У многих научных информационных систем для сбора, хранения и первичной обработки данных о результатив исследований, включая REF и АСУ РИД РАН, есть некоторые общие слабые места. Учет качества и результативности исследований в них в существенной степени основан на субъективных мнен (экспертные панели) [[1]], а также на основе использования показателей типа "индекс цитирования" [[2]], у количества цитирования статей и скорректированных на значения импакт-фактора издания, в котором соотве были опубликованы или процитированы.

Author(s)

Author name	Паринов Сергей
Author profile	Паринов Сергей Иванович
Workplace profile	Федеральное государственное бюджетное учреждение науки Центральный экономико-математический инстит академии наук

Artifact's relationships

Relationship	**Handle:** Улучшение процедуры экспертной оценки результативности исследований **Date:** 2010-09-02 **QualAttr:** approved_by (3)это подтверждает данный артефакт
Relationship	**Handle:** Недостатки индексов цитирования для оценки результативности исследований **Date:** 2010-09-02 **QualAttr:** approved_by (3)это подтверждает данный артефакт

Other data about the Object

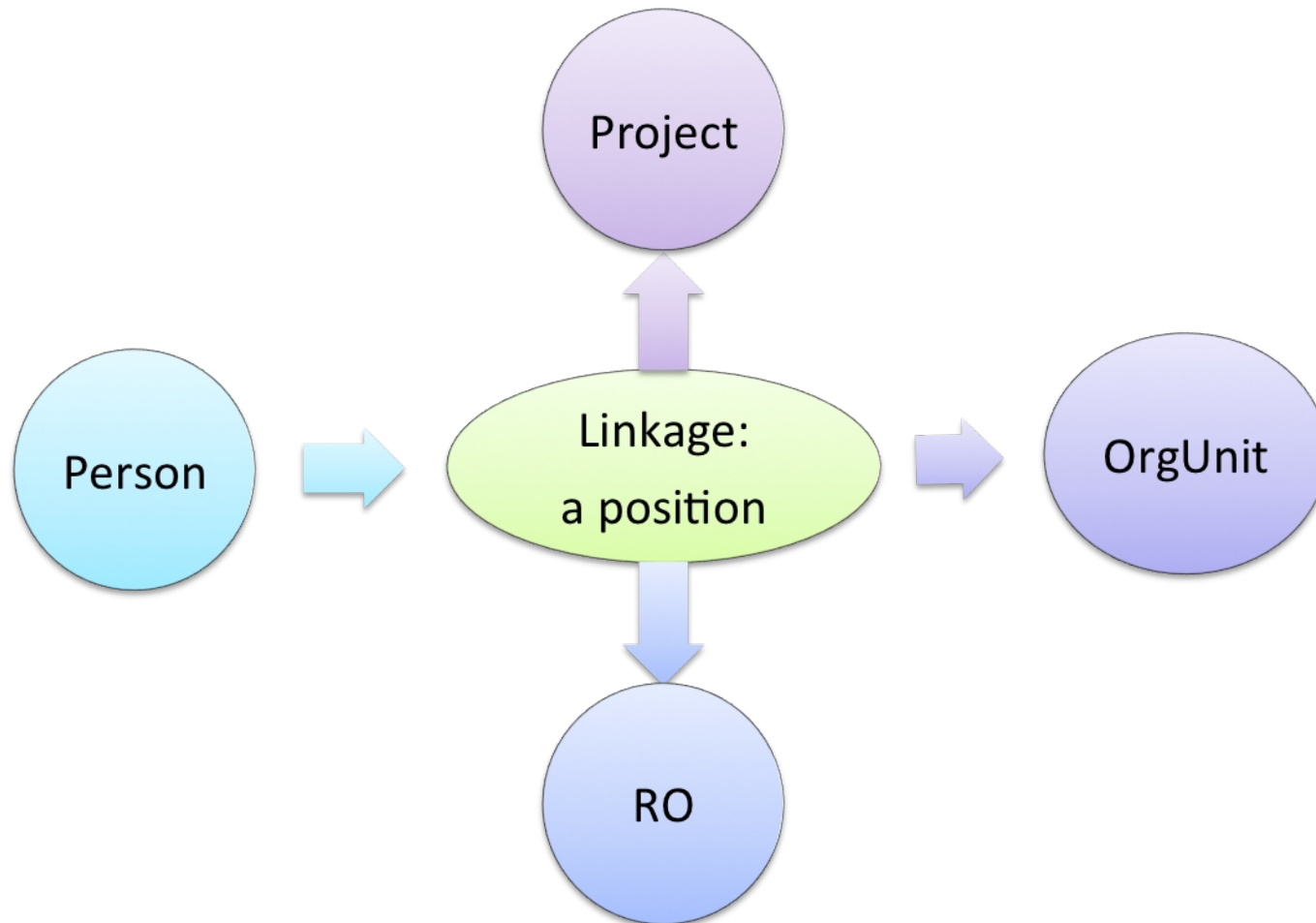|	
Object handle	spz:sparinov:swobjr:4
Creation/Entry date	2010-09-01 / 2013-11-24
Revision/Change date	2010-09-01 / 2013-11-25
Data Type	Research artifacts	artifact
Discipline	Informatics	informatics
Series	Научные артефакты по теме "научные информационные системы"
Archive	Архив электронных материалов по информатике и экономике

"Citation" data type

Citation title	RUS: Цитируемость и доверие к автору - основа научной системы публикаций ENG: Citability and credit to authors - scientific publishing system works
Keywords for searching	RUS: концепция нано-публикаций, совершенствование и развитие системы научных публикаций ENG: Nano-Publication, scientific circulation system improvement
Citation text	RUS: Цитируемость и доверие к автору имеют первостепенное значение для работы системы научных публикаций. [[1]], [[repec:rus:mqijxk:23|проверка сноски]] ENG: Citeability and credit to authors are of prime importance to the way the scientific publishing system works

Citation source

Source's ID at Socionet	repec:rsw:rswwps:rswwps75
Source material's bibliography	Barend Mons and Jan Velterop. Nano-Publication in the e-science era. Working paper, 2009
Link to the source material	http://www.nbic.nl/uploads/media/Nano-Publication_BarendMons-JanVelterop.pdf
Comments to the link	Код источника в Соционет приведен только для тестирования.

Citation usage areas and linkages

Usage areas classification codes (GRNTI) of the citation	20_19_15 **Classification:** Аналитико-синтетическая переработка документальных источников информации: Библиографическое описание источников информации 20_19_19 **Classification:** Аналитико-синтетическая переработка документальных источников информации: Аннотирование и реферирование
Linkage	**Handle:** Nano-publication: what is the concept **Date:** 2010-04-23 2010-04-25 **QualAttr:** relatives (4)близкий или связанный текст **QualComm:** связанные между собой цитаты из одного источника
Linkage	**Handle:** A new approach to design a virtual research environment **Date:** 2010-04-27 **QualAttr:** approved_by (3)материал подтверждает данную цитату **QualComm:** связь создана только для тестирования

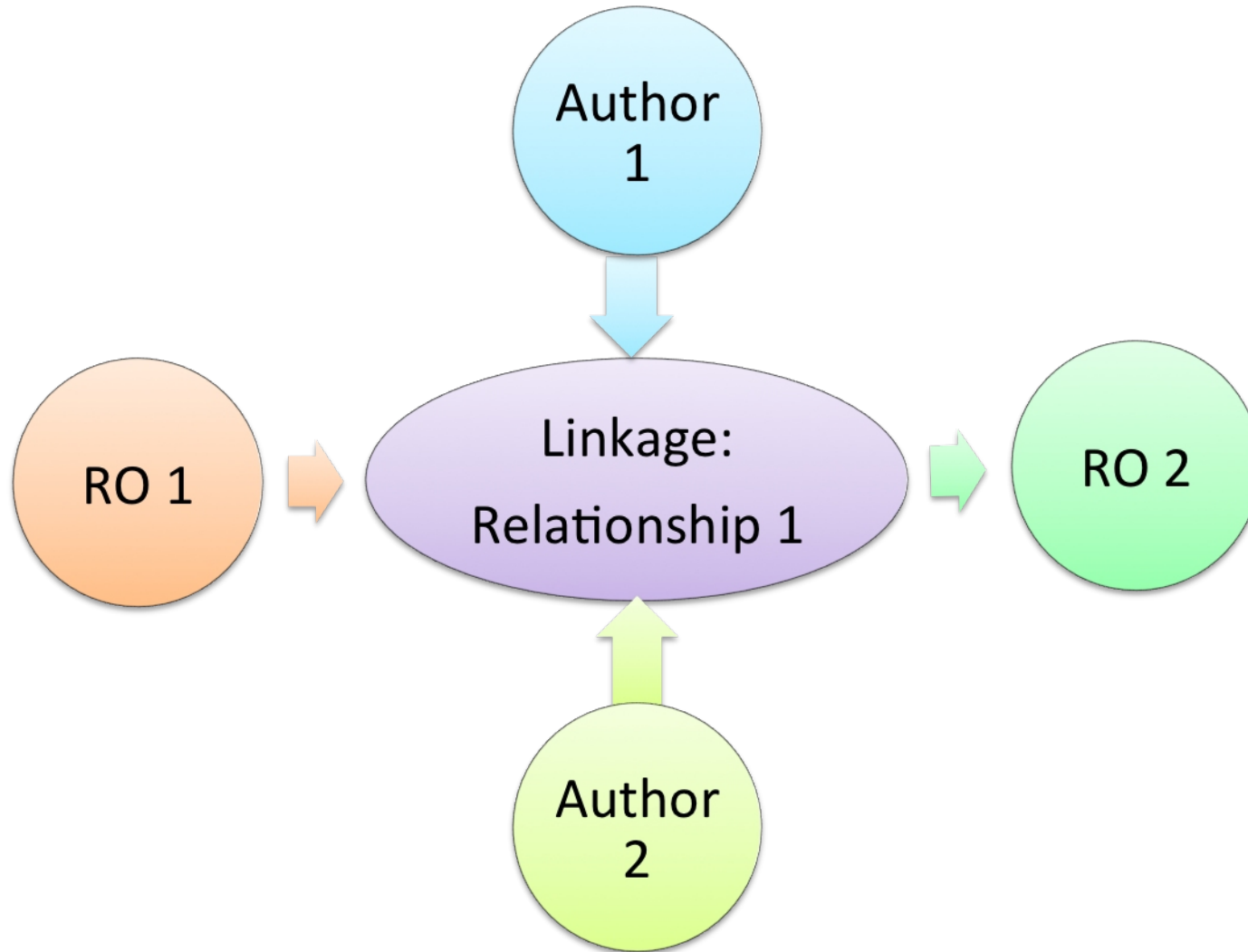# Open (re-)Use technology: 2nd component

- Socionet provides scientists a tool to <u>express explicitly scientific relationships</u> between available research objects that allows a collecting of statistics about scientists' "tries and fails" and about their motivations to re-use research outputs

Obvious use cases:
{person, organization, RO, etc.}

"**person**" → "**organization**" ("*employee*", "*head*", "*director*", etc.)

"**person**" → "**person**" ("*manager*", "*supervisor*", etc.)

"**person**" → "**research output / project**" ("*author*", "*editor*", "*translator*", etc.)

"**organization**" → "**research output**" ("*publisher*", "*organizational author*", etc.)

Use cases of a new research practice: {person, RO, etc.}

Inference ("*obtain background from*", "*updates*", etc.)

Impact/usage ("*contains assertion from*", "*corrects*", etc.)

Hierarchical and associative ("*broader*", "*narrower*", etc.)

Components of scientific composition ("*duplicate*", "*revised*", etc)

Usage proposal ("*can improve*", "*can illustrate*", "*can replace*", etc)

RO 1 → Linkage: Relationship 1 → RO 2

Author 1

Author 2

"Metrics" and "Linkage" data types

Services:

| Relationship title | RUS: заимствует основополагающие идеи в целевом |
| | ENG: obtain background from |

Source material(s)

| Source material's bibliography | CiTO |

Author(s)

Author name	Parinov Sergey
Author profile	Паринов Сергей Иванович
Workplace profile	Федеральное государственное бюджетное учреждение науки Центральный экономико-математ... академии наук

Other data about the Object

Object handle	spz:sparinov:nzihhw:obtain_background_from
Creation/Entry date	2011-04-08 / 2013-07-26
Revision/Change date	2011-04-08 / 2013-07-26
Data Type	Vocabularies of Scientific Relationships	metrics
Discipline	Interdisciplinary	interdisciplinary
Series	Отношения научного вывода между результатами исследований Properties of scientific inference outputs
Archive	Архив электронных материалов по информатике и экономике

Semanitc Linkage between Research Objects

(1) Source Object	⇨Linkage Properties⇨	(2) Linked Object
Source Object: Towards a Semantic Segment of a Research e-Infrastructure: necessary information objects, tools and services Data Type: paper	Class of Relationship: Отношения научного использования между результатами исследований Semantic Meaning: использует метод из целевого Semantic Code: spz:sparinov:itzrlg:uses_method_from	Linked Object: The electronic library: using technology to measure and support Open Science Data Type: paper

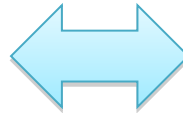| Author of the Linkage | Паринов Сергей Иванович |
Author's e-mail	sparinov@gmail.com
Author's profile	Паринов Сергей Иванович
Organization's profile	Федеральное государственное бюджетное учреждение науки Центральный экономико-математический институт Российской академии наук
Creation Date	2013-6-1
Revision Date	2013-6-1
Linkage ID	spz:serparinov:ainqli:8
Collection of Linkages	Коллекция "старых" связей с добавленной семантикой

Open (re-)Use technology: 3ʳᵈ component

Communication services

– To receive immediate signals about who and how used your RO

⟷

– To protest against or confirm usage characteristics of your RO, or provide other feedback

– To request on using or reviewing own RO by linking it with other RO or scientists' profiles

⟷

– To upgrade own RO by using/citing suggested artifacts, or to ban requests from some authors, etc.

A communication among researchers becomes stronger with better and faster coordination of individual activities

Open (re-)Use technology: 4ᵗʰ component

Statistics about re-use

- Automatic daily gathering and updating of scientometric "portraits" of a scientist, a department and an organization
- Quantitative indicators
  - Numbers of created/used artifacts and relationships
- Qualitative indicators
  - Statistical distributions (how scientists, laboratory, organization used research artifacts and how the community used their RO)

Motivations of outgoing relationships

title	share	amount
uses method from	■	1
contains assertion from	▬	2
revised or new version	■	1
duplicated copy	▬	2
related or relevant to	■	1
extends or broader	▬	2
obtain background from	■	1
		=10

Outgoing sentiments

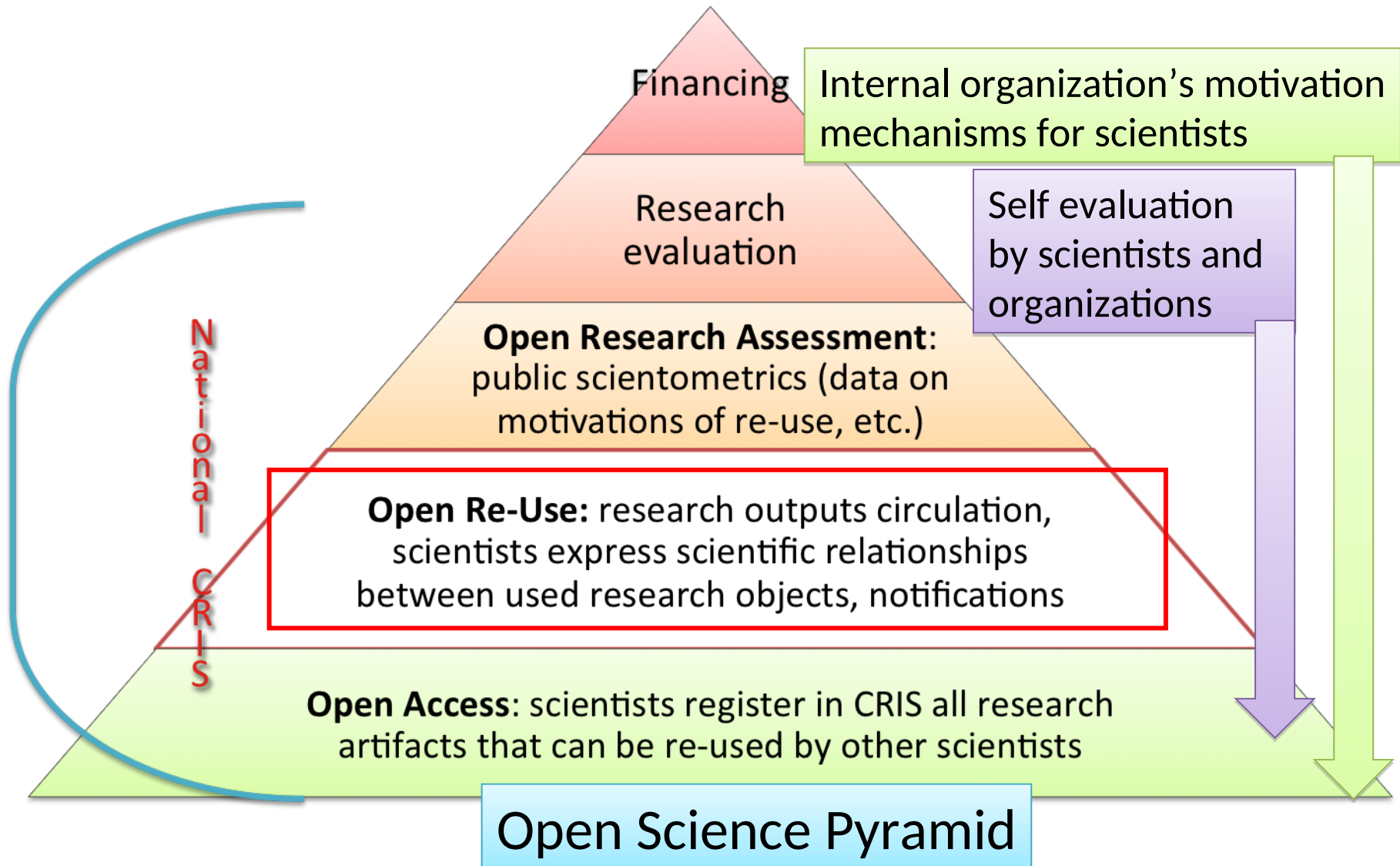| title	share	amount
very interesting result	▬▬	4
turning point for the science development	■	1
responds positively to	▬▬	6
		=11

(4) "Usage" portraits

stat-lnk.xml?h=repecrus:ecoper.parinov_sergey.56054-1&l=en

Semantic structure of linkages

Research object: Паринов Сергей Иванович

total linkages: 486
date: 2013-11-14 | object type: person-object

Outgoing linkages, total: ➡226 (47%)	Ingoing linkages, total: ⬅260 (53%)

Outgoing scientific relationships

title	share	%
research usage (3)		1
research material components (3)		1
to organization from the person (1)		0
to created collections (12)		5
to relative materials (1)		0
personal opinion (11)		5
to materials from the author (68)		30
hierarchy and association (3)		1
to out-of-date versions (6)		3
to cited materials (118)		52

Ingoing scientific relationships

title	share	%
research usage (9)		3
research material components (2)		1
researcher - research output relationship (147)		57
personal opinion (1)		0
from organizations to the person (1)		0
hierarchy and association (3)		1
from new versions (4)		2
from citing materials (93)		36

Motivations of outgoing relationships

title	share	amount
uses method from		1
contains assertion from		2
revised or new version		1
duplicated copy		2
related or relevant to		1
extends or broader		2
obtain background from		1
		=10

Motivations of ingoing relationships

title	share	amount
uses method from		1
contains assertion from		1
duplicated copy		2
related or relevant to		1
extends or broader		2
obtain background from		1
		=8

Outgoing sentiments

title	share	amount
very interesting result		4
turning point for the science development		1
responds positively to		6
		=11

Ingoing sentiments

title	share	amount
responds positively to		1
		=1

Expected challenges for GL agenda

Open Science Pyramid

Conclusion

- Welcome to collaboration on Open (re-)Use:

    - With developing of the open re-use approach as a part of the GL agenda
    - You can upload your content into Socionet and play with pilot version of the open re-use technology over your content
    - We can assist you to build the open re-use technology within your research information system