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CARO Business Model 2.0

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The report has been compiled in accordance with the Partnership agreement between the lead partner and UNECON (St. Peterburg, Russia) for the implementation of the project # R076 CAROTS of Interreg Baltic Sea Region.

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Abstract

The concept of the «innovation ecosystem» (IE) is found as the most effective model for the sustainable development of the interconnection of actors in an innovation process. Actor's structure mapping is an urgent task aimed at increasing the efficiency of European IEs.

Within the framework of Project *#R076 CAROTS of Intereg Baltic Sea Region*, a new phenomenal group, another IE actor (previously not identified and described) was discovered. It was formulated as «Commercial Analytical Research Organizations» (CARO), which can be referred to as …

> … a profit-seeking organisation acting as an intermediary between research infrastructures and industrial customers, providing support, consultation, analytical research and measurement services in the field of new materials/material sciences (including engineering), Life Science/BioTech, NanoTech and CleanTech on a contractual basis.

In the study of the nature and factors of economic growth of the IE actor, the following goal has been formulated: to develop a business model that can be addressed to new and developing CAROs to clarify their competitive position.

Based on the results of the interviews, the following CARO business model (methodology Osterwalder, 2004) is proposed in Table 1.

Table 1. CARO business model.

Pillar	Building Block of Business Model	CARO
Product	Value Proposition	Highly specialized R&D & services
Customer Interface	Target Customer	Researchers & Industry
	Distribution Channel	Lean Marketing
	Relationship	Belonging to an innovation ecosystem
Infrastructure Management	Value Configuration	Founders' scientific competencies
	Capability	Own Lab & Researchers
	Partnership	University, RI, IE leader
Financial Aspects	Cost Structure	Lab equipment & Staff
	Revenue Model	R&D/Service payment, Grants, State co-financing

Unique features of CARO as a new actor in the IE's structure:

- Scientists-founded company.
- Value Proposition – highly specialized R&D & services (measurement, testing, modelling, analysis, expertise).
- Capability – own lab & staff researchers.
- Relationship – belonging to an innovation ecosystem.

For academic purposes, CARO, as an IE actor, can be designated as «Small Scientific Service Companies» (SSSC), and defined as «scientists-founded private labs carry out highly specialized research & services». Actor's self-identification often uses (cases) «Specialized Science Service Companies» (SSSC).

Introduction

The concept of the «innovation ecosystem» is found (Gomes, 2018; Granstranda, Holgersonb, 2020) as the most effective model for the sustainable development of the interconnection of actors in an innovation process. The IE self-organization is aimed at finding effective mechanisms and actors that accelerate the innovation process. «The actors of the ecosystem try to establish the value structure and define the organizational architecture, and new actors may come on board» (Bahari et al., 2015). That is what the research is directed at – «Mapping IE» (Renando, 2020; Madis et al., 2020; Adner & Feiler, 2017; Hannah & Eisenhardt, 2017; Jacobides, et al., 2018). A vision of the current maps and actors of the IE of the European Union is presented by Komorowski (2019), Kubus (2020), Report; A Robust Innovation Ecosystem for the Future of Europe (2020). Currently, the structure of 13 IE actors is accepted in solidarity (The International Development Innovation Alliance, IDIA): Research Institutions; Incubators & Accelerators; Angel Investors; Venture Capitalists; Private Equity Firms; Government; Friends & Family; Civil Society Organizations; Development Agencies; Professionals (Human Capital); Startups & Enterprises; Market Facilitators & Intermediaries; Private Companies.

Within the framework of Project *#R076 CAROTS of Intereg Baltic Sea Region*[1], a (new) phenomenal IE actor (previously not identified and described) was discovered. It was formulated as «Commercial Analytical Research Organizations» (CARO)...

> Commercial Analytical Research Organizations (CARO) – are profit-seeking organisation acting as an intermediary between research infrastructures and industrial customers, providing support, consultation, analytical research and measurement services in the field of new materials/material sciences (including engineering), Life Science/BioTech, NanoTech and CleanTech on a contractual basis.

The definition is formulated as multi-criteria for further search and formalization of institutional groups/actors within IE. For study and development of the CARO segment, a grant was received, #R076 CAROTS of Intereg Baltic Sea Region. The allocation of CARO in the IE structure (IDIA map) was primarily considered at the border of two actors: «Private Companies» & «Research Institutions».

According to the primary definition, secondary analysis (2020[2]) & IDIA group assignment, the following criteria for CAROs affiliations are identified:

- M&SE (Staff headcount < 50; Turnover ≤ € 10m or Balance sheet total ≤ € 10m)[3];
- Profit-seeking private companies.
- Intermediary in innovation process.
- Specialization in R&D, support, consultation, analytical research and measurement services.
- Activities field – Material Science.

Actor's activities (stated in the definition – support, consultation, analytical research and measurement services) localize the scope of the search for CARO within the NACE Rev. 2 codes: M71.2 – Technical testing and analysis; M72 – Scientific research and development; M72.1 – Research and experimental development on natural sciences and engineering;

[1] CAROTS Project Application. https://projects.interreg-baltic.eu/projects/carots-196.html

[2] Grönlund, Mikko, Laiho Taina, Ranti Tuomas, Stenvall-Virtanen Sari. (2020) CARO Market Analysis. Project report #R076 CAROTS of Intereg Baltic Sea Region. https://www.carots.eu/sites/sites_custom/site_carots/content/e114136/e114157/CAROmarketanalysis.pdf

[3] Report from the commission on the implementation of the commission recommendation (2003/361/ec) of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises.

M72.1.1 – Research and experimental development on biotechnology; M72.1.9 – Other research and experimental development on natural sciences and engineering.

Accordingly, a search hypothesis was formulated: CARO as an IE actor is micro and small private companies with their own labs, established by scientists to provide highly specialized scientific services to researchers (startups) and industrial enterprises. CARO's unique position in IE is the center of narrow scientific competencies that are in demand in innovative processes. The effect of CARO scaling for IE is the acceleration of innovation processes through the provision of services connecting (Fig. 1) researchers (startups), research infrastructure (RI) and industrial enterprises.

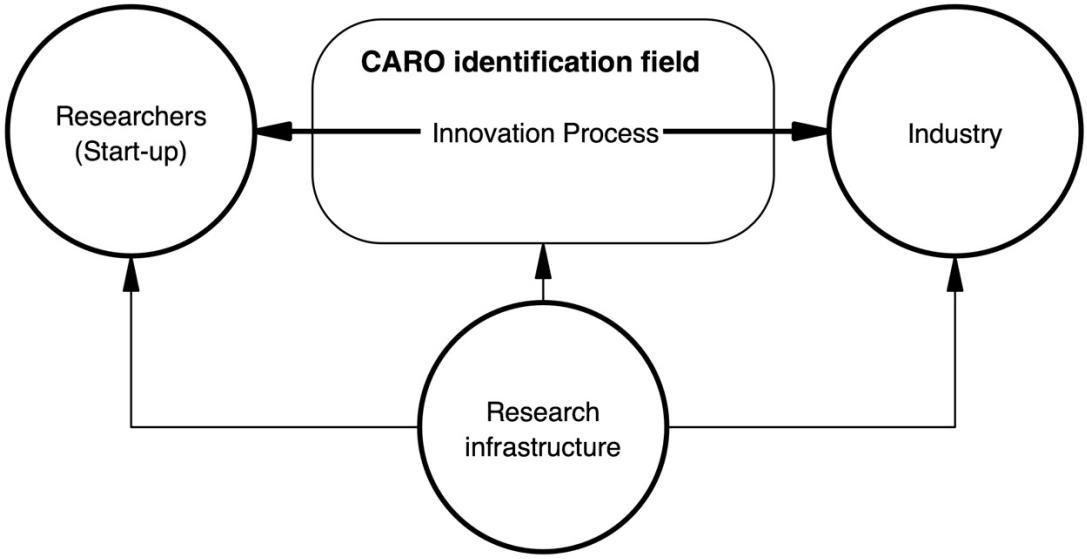

Fig. 1. CARO identification field.

Purpose: Highlight an effective CARO business model, which could be addressed to organizations of this type to improve their competitive position.

According to the purpose, the following objectives have been formulated:

- Choose a methodological platform for developing a CARO business model.
- Examine samples of CAROs according to building blocks of the business model.
- Develop business models for CARO.

Definition of Terms

Business model is a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams (*Osterwalder*).

CleanTech is any process, product, or service that reduces negative environmental impacts through significant energy efficiency improvements, the sustainable use of resources, or environmental protection activities. Clean technology includes a broad range of technology related to recycling, renewable energy, information technology, green transportation, electric motors, green chemistry, lighting, Greywater, and more (*Gaddy at all*).

Commercial Analytical Research Organizations (CAROs) are profit-seeking micro and small sized private companies acting as an intermediary between research infrastructures and industrial customers, providing targeted support and consultation based on analytical research and measurement services in a variety of fields on a contractual basis. (Developed definition in the process of discussion 2019-20. The primary definition is stated in «*The project documentation #R076 CAROTS of Intereg Baltic Sea Region*»).

Innovation ecosystem is the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors (*Granstranda, Holgerssonb 2020*).

Intellectual Property Is a term referring to types of property that result from creations of the human mind (the intellect). In a broad sense, it comprises patents, copyright and related rights, trade marks, know how, trade secrets, industrial designs, designs, drawings, reports, methods of research and developments, documented data, and description of inventions and discoveries (JRC Science Hub Communities /*The European Commission's science and knowledge service*).

Life Science/BioTech – EU economy can be classified into three broad groups: healthcare and pharmaceutical applications (1); agriculture, livestock, veterinary products and aquaculture (2); and industrial processes and manufacturing (3) (*Communication from the Commission to the Council, the European Parliament*).

NanoTech is a field of applied sciences and technologies involving the control of matter on the atomic and molecular scale, normally below 100 nanometers. Nanomaterials may exhibit different physical and chemical properties compared with the same substances at a normal scale, such as increased chemical reactivity due to greater surface area (*European Commission Decision C (2020)1862 of 25 March 2020*).

Research infrastructure means facilities, resources and related services that are used by the scientific community to conduct top-level research in their respective fields and covers major scientific equipment or sets of instruments; knowledge-based resources such as collections, archives or structures for scientific information; enabling Information and Communications Technology-based

infrastructures such as Grid, computing, software and communication, or any other entity of a unique nature essential to achieving excellence in research. Such infrastructures may be "single-sited" or "distributed" (an organised network of resources) (*European Commission: Legal framework for a European Research Infrastructure Consortium – ERIC Practical Guidelines*).

Specialised Scientific Service Companies (SSSCs) – carry out research and measurement services at (public) research infrastructures on behalf of industrial clients and provide targeted expertise in many technological and scientific fields on a contractual basis (*Official public definition in the project documentation from October 2020 #R076 CAROTS of Intereg Baltic Sea Region»*).

Technology Transfer can be described as the successful application and/or adaptation of a technology developed in one organisation to meet the needs of one or more other organisations. The transferred technology shall be innovative for the recipient. A technology transfer not only includes transfer between organisations but also between different industrial sectors. A technology transfer is deemed to have been achieved once a licensing agreement, a joint venture agreement, a manufacturing agreement, and/or a commercial agreement with technical assistance has been signed (JRC Science Hub Communities /*The European Commission's science and knowledge service*).

Abbreviations

BM	Business model
CARO	Commercial Analytical Research Organizations
IE	Innovation ecosystem
IDIA	The International Development Innovation Alliance
IP	Intellectual Property
M&SE	Micro and small –sized enterprises
RI	Research infrastructure
SSSC	Small (Specialized) Scientific Service Companies
TT	Technology Transfer

Design of the Study

As a methodological platform for building a business model, CARO was chosen[4] «Osterwalder model» (2004), including 9 Building Block (4 Pillar), table 2.

The uniqueness of CARO can be found in the difference in the content of building blocks from other (13) specializations of IE's actors.

Table 2. Business model description structure according to Osterwalder (2004).

Pillar	Building Blocks of Business Model	Description
Product	Value Proposition	A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer.
Customer Interface	Target Customer	The Target Customer is the segment of customers a company wants to offer value to.
	Distribution Channel	A Distribution Channel is a means of getting in touch with the customer.
	Relationship	The Relationship describes the kind of a link a company establishes between itself and the customer.
Infrastructure Management	Value Configuration	The Value Configuration describes the arrangement of activities and resources that are necessary to create value for the customer.
	Capability	A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer.
	Partnership	A Partnership is a voluntarily initiated cooperative agreement between two or more companies in order to create value for the customer.
Financial Aspects	Cost Structure	The Cost Structure is the representation in money of all the means employed in the business model.
	Revenue Model	The Revenue Model describes the way a company makes money through a variety of revenue flows.

According to the criteria, an international sample of 14 CAROs collected by the CAROTS project Partners: Measur Oy (Finland), MATECC AS (Estonia), TFTAK (Estonia), Eurofins Environment Testing Estonia OÜ (Estonia), SOLID-CHEM GmbH (Germany), FEAC Engineering (Greece), Celignis (Ireland), Polymer Institute ltd (Russia), Excelsus Structural Solutions (Swiss) AG (Switzerland), Lidaris Ltd. (Lithuania), Muovipoli Oy (Finland), Puska consulting (Finland), GLOKOR (Poland), CR competence (Sweden)

Within the sample, 2 batches of interviews were carried out. The first was an absentee written questionnaire based on «open» questions (Blocks: General Information; founding phase; functions; services; market; economy; CARO resources; challenges & trends; case – description of the completed contract). The second one were face-to-face in-depth interviews (personal, telephone, Internet). The qualitative analysis of the interview results was

[4] This Report does not describe the theoretical background and the rationale for choosing an approach to developing a business model. The process of analysis and selection of the type of business model for CARO are presented in scientific articles by Alekseev Andrey A. (orcid.org/0000-0003-1865-8655 Scopus ID: 57191405757).

supplemented by a quantitative analysis of the dynamics of the financial indicators of the CAROs companies.

The combined analysis of interviews and financial information provided the basis for formulating the Building Blocks of the Business Model.

Analysis of Data

Value Proposition

CAROs Value Proposition: highly specialized R&D & services (measurement, testing, modeling, analysis, expertise). The direction of CARO's specialization predetermined with the scientific background of the founder–scientist.

The key difference between the CARO's business model and universities, RTO & CRO is the integration of competencies within one specialist – the founder–scientist of the CARO company. The integration of scientific and entrepreneurial competences in founder–scientist – contracts direct executor, provides marketing flexibility and a high efficiency of the business . Therefore, an important factor of competitiveness, value for CARO's customers is their efficiency and flexibility in consumer requests.

> Interview quotation: «...The company was established in response to the market demand. The customers were not willing to engage with the university because of differences in mentality, motivation and bureaucratic processes which result in lost time, inflexibility in service execution and problems with availability of researchers».

In this context, an important component of the value of CARO services is the «analysis» of the results of R&D and service, based on the scientific competencies of CARO founder.

> Interview quotation:
>
> «In addition to that, we provide free consultancy to potential clients.... But what gives a much higher value is that we write a personal interpretation of the results of the sample».
>
> «...we not only offer the development of customer–tailored experimental set ups and data collection at synchrotron facilities, but also expert data analysis and interpretation».

CARO's market position is realized through a service offer, Table 3.

Table 3. List of CARO services.

Service	Content
R&D	R&D service provision for innovative products and processes.
Process audit	Current and prospective need assessment in technologies and equipment of primary and secondary business processes.
Knowledge and technology effect assessment	Potential effect assessment of knowledge and technology attraction into primary and secondary production processes, research and development program inclusion.
Innovative infrastructure access	Access to innovative infrastructure (techno parks, multiple–access centers, etc.).
Prototyping	ToR preparation service and prototyping process tracking as well as modelling and field testing of innovative products.
Engineering services	Engineering services provision (direct or intermediary) within technology innovation processes.

Service	Content
Expert services	Expert services provision (direct or intermediary) within technology innovation processes.

Target Customer

There are 2 types of CARO strategic clients: «Researchers» (in the format of an individual researcher or organized in a start-up) and «Industry» (company – IE core). This is what CARO's intermedial position in the innovation process is: linking researchers and industry. CARO does not provide direct services of technological transfer but performs this function indirectly through R&D and service (table 3), accelerating the stages of the innovation process, bringing together Researchers and Industry (see CARO definition, p. 7).

At an early stage of development, the founders of CARO formed a portfolio of core clients (IE/industry leaders), creating CARO's goodwill.

Industry uses CAROs as an outsourcing company in specialized research, tests and measurements in situations where they: a) do not have their own specialized labs and researchers; b) venture innovation projects; c) grant funding addressed M&SE (various options for collaboration between Industry and CARO under the grant).

Researchers uses CAROs scientific competence and the potential of labs equipment. If the labs or competencies are insufficient (for the execution of the contract), CARO uses the resources of RI and third-party researchers. This is how the intermediary function of CARO is carried out in relation to RI (Fig. 1). CARO competitive advantage (against Universities, RTO & CRO) is ready to work with a single (not complex) Researchers contracts with relatively low margin.

Distribution Channel

CARO forms the Distribution Channel based on the «Lean Marketing & Sales» principles: direct marketing, networking (sci, prof, etc.), prospecting. The founder-scientist is the direct executor of marketing and sales: «active marketing» based on monitoring («prospecting») the business activity of IE actors. Digital methods, activity in professional and social networks occupy a significant place in marketing.

«Sales & Marketing» less than 5% in expenses, fig. 3.

CARO does not invest in the awareness of the company, does not have marketing programs. CARO's brand is the Founder's Name, and his scientific fame is the background for promoting scientific service. That is, the promotion of CARO is inseparable from the personality of the Founder.

Relationship

CARO configures the service and R&D directions in cooperation with strategic clients (global market leaders – IE core) and their business needs. They monitor business activities of IE, their innovative prospects (in which they see a potential for participation). Thus, CARO belongs to the innovation ecosystem, the core of which is their strategic customers (IE/market leaders).

> Interview quotation: «... we already have an eco-system (IE). Thus, the platform already exists. Together we form that platform. I don't think that we should have an organization that is made top-down. The mediator network is a platform. No need for one point of contact. As

long as we are good at sharing clients between us. No need for a specific organization around this».

Process chain for industrial customers[5]

It begins with an initial discussion between the (potential) customer and the CARO staff. Under an NDA, they try to find a common vision of how to solve the needs of the customer. In many cases, the first contact is free of charge – if the discussion develops, a contract for consulting might be signed. If both sides agree on a suitable strategy for samples preparation, measurements and data analysis as well as the objectives that should be reached through the agreement, a contract is concluded. In many cases, the customer provides samples, which the CARO prepares for further measurements.

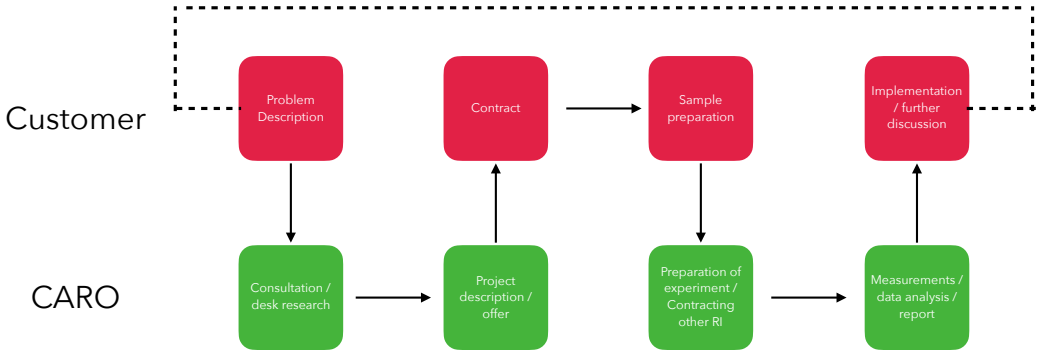

Fig. 2. Process chain for industrial customers.

If the CARO does not use only their own measurement instruments, it will conclude additional contracts for measurements and in some cases data analysis with universities, large-scale RI or other research institutes. After measurement and data analysis, CARO staff will write a report and discuss the results with the customer. In many cases the CARO report will highlight open questions, which might lead to additional discussion and an additional contract – in this case the process will go from the very beginning once more. Not all steps have to be carried out by all CAROs – it depends on the specific case – or there are even CAROs that specialize in one only step, such as companies that only offer data analysis or are specialized in consulting or acting as a broker of services.

Value Configuration

Value Configuration bases on founders' scientific competencies.

The reason for the creation of private companies by scientists is the desire to commercialize their scientific competencies. As a rule, the founders have formed a scientific background at a university or academic research organization, within which they have failed to find an opportunity to realize the commercial potential of their knowledge and skills.

The key challenge in the organization and development of CARO companies is found (cases) in the acquisition of entrepreneurial competencies by the founders.

The strategy for the growth of value, added value is based on investing in labs equipment.

Capability

Sustainability, quality of CARO's services is based on investing in their own labs and involving fulltime researchers.

[5] Quoted Dr. rer. nat. Uwe Sassenberg (Deutsches Elektronen-Synchrotron (DESY), Innovation & Technology Transfer (ITT)), CAROTS project manager.

The strategic vision (of the founders–scientists) of sustainability is based on the "deepening" of narrowly specialized scientific competencies (as a factor of competitiveness). The scaling of CARO (revenue) is not found (cases) as a strategic goal. The growth of marginality is based on an increase in added value, expansion of the potential of its own labs.

> Interview quotation:
>
> CARO «... has competent people with expertise in food and fermentation technologies, advanced equipment and qualification to provide consultations in the same field».
>
> «We have a lot of measurement and processing equipment by now and can do almost everything in–house and very quickly. We avoid outsourcing because it often fails and causes issues and delays».

In some cases, an alternative is to obtain exclusive access to universities, RI labs and scientific groups.

> Science[6]
>
> «CAROs can stabilize their cash flow via participation in public projects. Additionally, they can use the results of public projects – articles and cases – for advertising, because the results of public projects are mainly not secret. Collaboration with colleagues in science either via industrial research or in public projects brings a tighter contact to persons responsible for measurements at RI (e.g. to get a faster access) and helps CARO staff to be in methods up–to–date».

Partnership

Establishing partnerships is an important part of CARO's strategic position. CARO builds partnerships with IE's actors: universities, RI & large industrial enterprises (IE/industry/market leaders).

The partnership strategy is based on the two directions. The first, with IE leaders determining the directions of innovative development of all IE actors, are key investors in long–term R&D programs. The goal of a partnership is integration into long–term innovative development programs. Participation in these programs: a) forms a stable source of income, the duration of such contracts is 2–3 years; b) increases the intellectual capital of CARO; c) increases market reputation (IE leader brand). That is why many CAROs invest part of their resources in proactive («research groundwork») fundamental and applied R&D, the results of which can be credited to IE leaders. On the other hand, proactive fundamental and applied R&D is also focused on grant support from private and public foundations. The second function of a partnership is to build relations with Universities and RI (no cases of a partnership with RTOs were found), in order to expand one's own resource base (labs, researchers) to fulfill contracts. Thus, the indicated partnerships allow CARO to integrate into IE as an actor with an independent position. This position is self–identified in partnership as «specialized scientific service companies» (SSSC) in a narrow field of scientific competences, and is usually expressed as a single direction or problem (ionic liquids as lubricants, laser focusing, enzyme development, etc.). As an example, the position and self–identification of a CARO:

> Scientific Services S / D, Inc. (https://sciservsd.com/index.html)
>
> «We are a small R&D Laboratory located in Sparrow Bush, NY (approximately 60 miles {97 km} northwest from New York City) and are owned and operated by George C. Feighner; an industrial chemist with over 50 years of industrial and commercial experience. We provide personalized service in testing, formulating and consulting to the Household Cleaning Products Industry. Our specialty is detergents and cleaners».

[6] Quoted Dr. rer. nat. Uwe Sassenberg (Deutsches Elektronen–Synchrotron (DESY), Innovation & Technology Transfer (ITT)), CAROTS project manager.

Cost Structure

CARO revenues are not evenly distributed in the operating period. Accordingly, the primary problem of all types of CARO lies in covering overheads that could lead to financial instability. Credit policy also points to this problem. According to analyses of operating finances, CARO expenses focus on fixed assets (labs equipment) & staff. In many cases, it is the recruitment and retention of fulltime staff (researchers) that should be seen as the problem of CARO scaling.

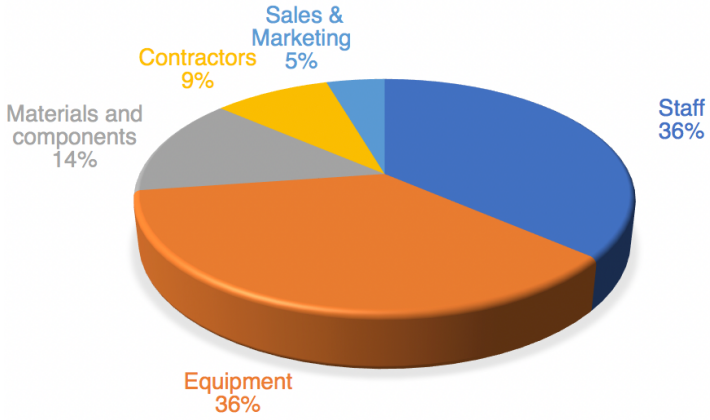

Fig. 3. CARO's cost structure.

Revenue Model

Pricing is most often based on an assessment of the time spent by specialists («cost-oriented pricing» method, «cost-plus pricing»); no fixed price list is offered. Of course, the costs for the customer include (by a separate calculation) the purchase of third-party components and outsourcing services.

Interview quotation: «... Hourly fee varies depending on activity. Overhead is part of that».

Analysis of the cases of implemented CARO projects allowed us to distinguish three main types of income (Table 4).

Table 4. CARO Revenue Model.

Income source	Nature of contractual relations	Value, %
R&D and services	Income from performed services (R&D, measurements, engineering, etc., table 3) is directly received by the employees of the company.	40-80
State co-financing	Financing within the framework of national programs for innovative development (tax incentives, compensation for variable business expenses – rent, promotion, etc., transaction costs).	40-69

a CARO in the early and late stages of its development.

Interview quotation: «Mostly public grant money was used to finance overhead.... was expected to have an important state subsidy component – in this round of calls for proposal the subsidy would have been 40% of the costs (previous round was as high as 60% for NanoTAK)».

Summary

Based on the results of the Analysis of Data, the CARO business model is proposed in Table 5 below.

Table 5. The results of the study of CARO business models.

Pillar	Building Block of Business Model	CARO
Product	Value Proposition	Highly specialized R&D & services
Customer Interface	Target Customer	Researchers & Industry
	Distribution Channel	Lean Marketing
	Relationship	Belonging to an innovation ecosystem
Infrastructure Management	Value Configuration	Founders' scientific competencies
	Capability	Own Lab & Researchers
	Partnership	University, RI, IE leader
Financial Aspects	Cost Structure	Lab equipment & Staff
	Revenue Model	R&D/Service payment, Grants, State co-financing

The uniqueness of the CARO business model (in relation to other IE actors) lies in the combination of 4 positions:

Scientist-founded company. The establishment of private companies by scientists is built on the search for the commercialization of their scientific competencies. As a rule, the founders have formed a scientific background at a university or academic research organization, within which they have not found an opportunity to realize the commercial potential of their knowledge and skills.

Value Proposition – highly specialized R&D & services (measurement, testing, modelling, analysis, expertise). CARO's unique position in IE is the center of narrow scientific competencies that are in demand in innovative processes, integrated by an IE leader. The integration of scientific, innovative and entrepreneurial competences in founder-scientist – contracts direct executor provides a high efficiency of the business and marketing flexibility.

Capability – privately-owned labs & staff researchers. Private centers of narrow scientific competence are formed. Sustainability is based on high added value generated by the ownership of lab equipment and employment of staff researchers. This is what opens up a wide field of capability: from contract R&D and services to independent participation in scientific grant programs. In some cases, CAROs initiate their own innovative projects, offering their results to IE leaders.

Relationship – belonging to an innovation ecosystem. The sustainability of CARO development is determined by the relationship with the leader (global market or scientific), the core of IE. This becomes possible due to permanent monitoring of IE's programs and innovative trends.

Extension 1

For academic purposes, CARO, as an IE actor, can be designated as «Small Scientific Service Companies» (SSSC), and its definition can be «scientists founded private labs carry out highly specialized research & services». Actor's self-identification often uses (cases) «Specialized Science Service Companies» (SSSC).

Extension 2

Expanding the vision – the prospect of founding CARO network. SSSC (CARO) represent different scientific, innovative directions IE. Networking and cooperation of various scientific directions SSSC (CARO) can become a source of convergent technologies (NBIC): bio – informatics etc.

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