



BIGINN: a new beginning for business and Big Science innovation

COS-CLUSTER PROJECT N° 101037928 – BIGINN
Deliverable D2.2 Value chains and business competence matrix

Public

Co-funded by the European Union



Contents

- Tables 2
- Version control..... 2
- 1. INTRODUCTION 4**
 - 1.1 Executive summary 4
 - 1.2 Introduction and objectives..... 4
 - 1.3 Legal notice 5
- 2. VALUE CHAIN AND BUSINESS COMPETENCES MATRIX..... 7**
 - 2.1 Structure of the matrix 7
 - 2.2 The matrix..... 9

Tables

- Table 1: BIGINN partnership 5
- Table 2: List of technologies used at BSBF 2022 7
- Table 3: Final structure of the matrix 8

Version control

Version	Date	Author	Description of Changes/Status
01	2022-06-07	INEUSTAR	First draft
01	2022-20-09	DTI	First draft
01	2022-09-28	INEUSTAR	Final version



01

INTRODUCTION

1. INTRODUCTION

1.1 Executive summary

This deliverable report is related to the WP2 – Task 2.2 Analysis of value chains and business competences. The deliverable is a public business competence matrix that includes an overview of competences in companies from BIGINN partnership countries: Danish, Lithuanian and Spanish companies with presence in the Big Science Sector. It is made available to the public from M8 of the project and will be continuously updated at least until the end of the project in M24.

The business categories chosen to structure this matrix are based on the selection made for the Big Science Business Forum (BSBF) congress in Granada, in October 2022, by the conference organizers. BSBF is the main business conference in the BigScience Market, where all companies, Big Science Organisations and other stakeholders are present. The BSBF business categories don't exactly match with the capacities' matrixes drawn up by the partners in Denmark and Spain before the BIGINN project, but the partnership has decided that the BSBF categorisation is the most adequate one for this exercise because it structures the Big Science market in a clear and complete way, covering all aspects available.

This will be a live document that might be updated during the project according to the new capacities and eventually new companies that can arise in the different countries.

1.2 Introduction and objectives

BIGINN marks a new beginning for business and Big Science Innovation. The project has the overarching objective of exploiting the potential for innovation and international collaboration from the Big Science market by tapping into the huge investments in state-of-the-art technologies in this field. The consortium partners from Denmark, Spain and Lithuania have joined forces for the ClusterXchange programme to address the specific challenges of the sector, namely:

- Strengthen and professionalise the cluster management skills in the new area of Big Science clusters.
- Employ cluster mobility schemes to implement cross-fertilization of innovation opportunities at the different clusters.
- Improve SME global competitiveness by establishing international relations and collaborations.

The objective of this deliverable is to draw up a business competence matrix to help analyse the gaps and strength of the cluster value chains. The matrix will enable categories of specialized companies to seek complementarity and business partnerships within other business fields intraregionally and inter-regionally. The matrix lists the companies' capacities in different technological categories. It aims at serving as a tool for detecting, in an easy way, specific gaps and opportunities in the European Big Science Market. Also, it can be used as a quick guide for Big Science facilities to search for the European suppliers that fit their most immediate needs. Moreover, this document will help to develop and strengthen the portfolio of services of the partners in BIGINN project as it will identify value chain gaps, for which new services can be implemented.

1.3 Legal notice

© This document is the property of the BIGINN Consortium. It may not be copied, reproduced, or modified in whole or in part for any purpose without written permission from the BIGINN Consortium, which consists of the following participants:

Table 1: BIGINN partnership

Participant Organization Name	Short Name	Country
TEKNOLOGISK INSTITUT	DTI	Denmark
ASOCIACIÓN ESPAÑOLA DE LA INDUSTRIA DE LA CIENCIA	INEUSTAR	Spain
VIESOJI ISTAIGA FIZIKOS INSTITUTO MOKSLO IR TECHNOLOGIJU PARKAS	LITEK	Lithuania

02

THE MATRIX

This Chapter is dedicated to show the matrix including value chain and business competences of Danish, Lithuanian and Spanish companies in Big Science



2. VALUE CHAIN AND BUSINESS COMPETENCES MATRIX

2.1 Structure of the matrix

In order to ensure that all the categories that the Big Science market covers are included in this work, an intense analytical research exercise has been carried out.

First, the pre-existing competence matrixes from Spain (INDUCIENCIA and CDTI) and Denmark (DTI) were examined, and a first combined overview was produced. This cross-combination ended up in more than 50 categories and sub-categories and proved the difficulty of drawing up clear business undercategories for this market. As one of the objectives of this deliverable is to provide a quick and easy-to-follow (pocket size) guide to the BigScience market, this first approach was rejected.

The partnership then surveyed and analysed other existing BigScience business categorisation taxonomies and decided to use the categories established for the BSBF conference (Granada, Spain, October 2022 - <https://www.bsbf2020.org/>). (see Table 2). This large conference congregates all the European BigScience infrastructure organisations and their stakeholders, with a strong focus on the technological needs and is the main meeting point between BigScience Research Infrastructures and industry. The technology and business categories employed to structure the sessions and key notes at this event, are developed in direct collaboration with the BigScience Infrastructures and thus expresses the future technological needs of these, Choosing the BSBF taxonomy as a structure for the competences analysis therefore seemed like a good choice to ensure that we identify and address state-of-the-art technologies, covering the Big Science market.

Table 2: List of technologies used at BSBF 2022

Technology
Electrical, power electronics, electromechanical and RF systems
Diagnostics and detectors, sensors, optics and instruments
Information and communication technologies
Basic material technologies and advanced manufacturing techniques
Complex building construction and its safety related systems
High precision and large mechanical components
Instrumentation, control and CODAC
Cryogenics, vacuum and leak detection technologies
Superconductivity and superconducting magnets

The partnership then topped the BSBF technologies listed in Table 2, to settle on the final structure of the matrix. The BSBF list form the main categories overview, and training, engineering services or utilities & installations, were added, as they had proven to be useful sub-

categories in the BIGINN partnership countries, a couple of sub-categories were also added for a more detailed description and coverage of the sector.

Considering all the above, the final structure of the matrix is set as shown in Table 3 below and includes 13 main categories (in bold).

Table 3: Final structure of the matrix

Technology
(A) Electrical, power electronics, electromechanical and RF systems
Electrical and power electronics
Mechatronics
RF systems
(B) Diagnostics and detectors, sensors, optics and instruments
Diagnostics and detectors, sensors
Optics & lasers
Instrumentation
(C) Information and communication technologies
Data management and processing
Communication
IT Hardware
(D) Basic material technologies and advanced manufacturing techniques
Materials
Advanced manufacturing
<i>Surface Treatment</i>
<i>Advanced welding</i>
<i>Additive Manufacturing</i>
<i>High precision/large components</i>
<i>Others</i>
(E) Complex building construction and its safety related systems
Complex building construction
Safety systems

(F) High precision and large mechanical components
High Precision manufacturing
Large Mechanical components
(G) Automation, Control and Remote handling systems
(H) Cryogenics, vacuum and leak detection technologies
Cryogenics
Vacuum
Leak detection technologies
(I) Electromagnetism, magnets and superconductivity
Electromagnetism
Magnets and Superconductivity
(J) Engineering Services
(K) Training
(L) Utilities & Installations
HVAC and Plumbing
Electrical Installations
Lab Equipment
Gasses and Chemicals
Office Supply and Furniture
Utilities
(M) Radioactive materials and handling
Radioactive Handling
Radioactive Materials

2.2 The matrix

The main part of this deliverable is the following capacities matrix. It can be downloaded in excel format and is available for the whole Big Science community from the BIGINN webpage.. <https://biginn.eu/about/> or <https://litek.it/competence-matrix/>

BIGINN

A new beginning for business and Big Science innovation

COS-CLUSTER PROJECT N° 101037928 – BIGINN

Deliverable D2.2 Value chain and business competences matrix



Strengthening the European economy through collaboration