



## **EPICENTRE PROJECT**

### Project Deliverable

# D2.1 Results of the call for Expression of interest by corporates and validated Key Performance Areas



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## 1. Executive Summary

The document “D2.1 - Analysis and assessment of the EPICENTRE Key Performance Areas through the active engagement of large industrial players” aims to create, in a first phase, a preliminary study on desk for the identification of innovation 'perimeters' and potential innovation scenarios in which to set up project activities. Parallel to the on-desk study, an activity is carried out to involve large companies in the identification of new innovation trends and Key Performance Areas. The participation in the project foresees several steps: an expression of interest, a specific questionnaire on innovation trends and challenges for start-ups and Innovative SMEs and finally an interview dedicated to an in-depth analysis of companies' innovation needs.

Therefore, the second part of this document will be dedicated to the identification of corporates and large companies, divided by sector of activity; the evaluation of the applications received by the corporates and of the proposed innovation scenarios; and finally, the definition of the Key Performance Areas represented by selected companies.

## 2. Introduction

### 2.1. Background

The aim of the EPICENTRE project is to foster dialogue and collaboration between two different entrepreneurial realities (innovative SMEs and start-ups on one hand and corporations on the other) which are used to working with very different approaches. The entire project was conceived and implemented according to the Open Innovation paradigm, in order to overcome cultural barriers such as the 'not invented here' syndrome. In today's era, any company, in order to maintain its competitive advantage in the market, needs to rethink its business model and the related value creation method more and more frequently; this is possible by activating a real path of experimentation of new innovative solutions on a daily basis. However, companies do not always have an in-house Research & Development division and often do not have an internal reference figure, such as, for example, the Chief Innovation Officer. In fact, as of today, 70% of companies have never initiated an Open Innovation process and 50% have never collaborated with start-ups.

On the one hand, there are the large corporations that tend to express resistance to change and are defined as rigid because they have excessively high procedures, methodologies and bureaucratic timeframes that do not allow them to respond to rapid changes in market demand and in some cases block innovation processes internally.

On the other hand, we find the start-up ecosystem, which has become increasingly numerous in recent years, and which generally possesses a disruptive culture, i.e. a radical and not merely incremental innovation path that large corporations often sorely need. Start-ups can count on advanced and innovative technologies but have major shortcomings in the implementation of their solutions (as they are always looking for partner companies to test them) and in the translation of

their know-how into ready-to-market solutions. For these reasons, more than 90 per cent of start-ups fail after a few years of life or find themselves in very difficult situations, going through the so-called 'valley of death' and on average only 1 per cent of the start-ups seen are adequate for the needs of a specific company. The project aims to bridge this gap by creating a bridge between these two worlds. This synergy will be realised through the involvement of at least 25 corporates that will support the clusters in tracing the lines of innovation and technological trajectories within which their business needs are placed.

#### Where we started from: European Innovation Scoreboard 2022.

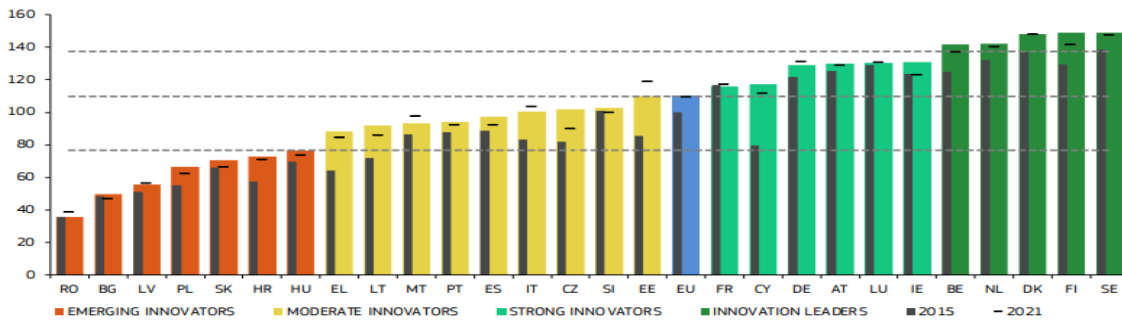
The annual European Innovation Scoreboard (EIS) provides a comparative assessment of the research and innovation performance of EU Member States and selected third countries, and the relative strengths and weaknesses of their research and innovation systems. Almost all EU Member States have increased their innovation performance since 2015 but the lowest performing countries are falling further behind. The innovation performance of the EU has increased by 9.9 percentage points since 2015. Innovation performance increased in 26 EU Member States. Performance has increased most in Cyprus, Estonia, and Greece.

The following indicators recorded the highest improvements: Business process innovators, International scientific co-publications, Innovative SMEs collaborating with others, Job-to-job mobility of Human Resources in Science & Technology, Public-private scientific co-publications, and Venture capital expenditures. Between 2015 and 2022, performance differences between the Member States have narrowed, in particular within the groups of Innovation Leaders, Strong Innovators and Moderate Innovators. The Emerging Innovators, as a group, are not catching up.

Between 2021 and 2022, performance has improved in 19 Member States, most strongly in Czechia, Ireland, and Finland (at 7.5%-points or more), and has declined for eight Member States, including Estonia, France, Germany, Italy, Latvia, Luxembourg, Malta, and Romania, with performance declining strongest in Estonia (-8.9%-points).

Based on their average performance (relative to the EU in 2022), Member States fall into four different performance groups (Figure 1). Belgium, Denmark, Finland, the Netherlands, and Sweden are Innovation Leaders with innovation performance well above the EU average. Austria, Cyprus, France, Germany, Ireland, and Luxembourg are Strong Innovators with performance above the EU average. The performance of Czechia, Estonia, Greece, Italy, Lithuania, Malta, Portugal, Slovenia, and Spain is below the EU average. These countries are Moderate Innovators. Bulgaria, Croatia, Hungary, Latvia, Poland, Romania and Slovakia are Emerging Innovators with performance well below the EU average.

Figure 1: Performance of EU Member States' innovation systems



Among the criteria used for the annual ranking, the EU also refers to the "Innovative SMEs collaborating with others".

### Annex C: Indicator values by country in 2022

	EU	BE	BG	CZ	DK	DE	EE	ES	FR	GR	HR	IT	CY	LV	LT	LU	HU	MT	NL	
<b>INFRASTRUCTURE FACILITIES</b>																				
Human resources																				
1.1.1 New doctorate graduates	0.7	0.9	0.3	0.8	1.0	1.1	0.6	1.0	0.5	0.7	0.8	0.4	0.6	0.4	0.2	0.4	0.7	0.3	0.2	0.6
1.1.2 Population completed tertiary education	41.2	50.9	33.6	34.9	49.1	35.7	43.2	61.7	44.2	48.7	50.3	35.7	28.3	58.3	45.5	57.5	62.8	32.9	42.4	55.6
1.1.3 Lifelong learning	10.8	10.2	1.8	5.8	22.4	7.7	18.4	13.6	3.5	14.4	11.0	5.1	9.9	9.7	8.6	8.5	17.9	5.9	13.8	26.6
Attractive research systems																				
1.2.1 International scientific co-publications	1181	2088	372	1222	3455	1131	1889	2075	1003	1107	1002	891	1036	2913	707	865	2848	655	1141	2297
1.2.2 Scientific publications among top 10% most cited	979.1	1207.7	270.1	496.2	1373.0	1047.1	859.5	1135.8	888.3	914.2	893.5	419.3	1061.8	822.1	307.6	557.1	1197.5	631.5	508.5	1491.8
1.2.3 Foreign doctorate students	17.8	32.6	8.6	22.3	36.1	23.1	25.6	35.5	1.5	19.2	37.9	8.2	15.8	24.0	11.7	6.6	89.0	25.5	35.3	47.9
Digitalisation																				
1.3.1 Broadband penetration	52.0	68.0	40.0	38.0	80.0	51.0	40.0	49.0	28.0	70.0	54.0	28.0	39.0	45.0	39.0	59.0	62.0	38.0	62.0	67.0
1.3.2 Individuals with above basic overall digital skills	26.0	26.0	8.0	24.0	37.0	19.0	28.0	40.0	22.0	38.0	31.0	23.0	21.0	24.0	23.0	32.0	22.0	35.0	33.0	53.0
<b>INVESTMENTS</b>																				
Finance and support																				
2.1.1 R&D expenditure in the public sector	0.78	0.92	0.27	0.77	1.18	1.03	0.78	0.32	0.79	0.62	0.76	0.65	0.56	0.36	0.48	0.60	0.52	0.37	0.23	0.75
2.1.2 Venture capital investments	0.190	0.216	0.025	0.132	0.322	0.156	0.689	0.167	0.044	0.188	0.312	0.189	0.080	0.401	0.040	0.279	0.227	0.114	0.006	0.309
2.1.3 Direct and indirect government support for business R&D	0.17	0.29	0.01	0.13	0.08	0.07	0.05	0.21	0.04	0.07	0.39	0.01	0.20	0.02	0.01	0.03	0.04	0.23	0.03	0.23
Firm investments																				
2.2.1 R&D expenditure in the business sector	1.53	2.53	0.58	1.21	1.84	2.11	0.98	0.91	0.69	0.78	1.56	0.60	0.93	0.37	0.22	0.55	0.61	1.23	0.43	1.54
2.2.2 Non-R&D innovation expenditure	0.80	0.83	0.36	1.84	0.82	1.34	1.47	0.04	0.89	0.56	0.23	0.56	0.61	0.65	0.31	2.11	0.26	0.84	0.39	0.16
2.2.3 Innovation expenditures per person employed	7484	11806	1197	4307	2838	11819	6275	9072	5077	4488	7798	2072	7338	2997	1120	3649	4995	3374	3050	6542
Use of information technologies																				
2.3.1 Enterprises providing ICT training	20.0	33.0	7.0	25.0	30.0	24.0	17.0	27.0	12.0	20.0	15.0	23.0	15.0	25.0	17.0	14.0	21.0	16.0	28.0	24.0
2.3.2 Employed ICT specialists	4.5	5.6	5.5	4.6	5.6	4.9	6.2	6.3	2.8	4.1	4.5	3.6	3.8	5.9	3.8	3.8	6.7	3.9	4.9	6.7
<b>INNOVATION ACTIVITIES</b>																				
Innovators																				
3.1.1 SMEs with product innovations	27.0	34.7	22.2	35.2	31.5	34.1	25.2	28.7	48.0	17.9	26.7	34.6	29.7	38.8	13.7	30.5	28.7	19.9	17.4	27.7
3.1.2 SMEs with business process innovations	41.6	63.4	24.5	52.2	45.5	54.8	41.1	47.7	66.3	26.1	44.1	47.2	46.4	64.9	24.9	44.8	39.3	23.5	34.5	43.1
Linkages																				
3.2.1 Innovative SMEs collaborating with others	11.7	24.3	7.3	14.5	14.5	13.5	17.3	22.0	19.3	7.3	15.5	12.3	13.1	27.8	6.1	14.4	12.9	9.9	8.1	18.0
3.2.2 Public-private co-publications	133.8	356.2	49.3	173.8	699.0	245.0	261.6	318.8	178.5	152.9	150.8	188.5	189.7	395.1	135.2	361.6	537.2	154.6	149.2	427.5
3.2.3 Job-to-job mobility of Human Resources in S&T	6.8	6.5	2.8	4.3	10.7	8.8	9.5	9.4	4.8	6.9	7.4	6.9	4.4	10.5	6.2	10.8	9.4	6.7	7.6	8.7
Intellectual assets																				
3.3.1 PCT patent applications	3.49	3.17	0.47	0.66	5.95	6.14	1.56	1.40	0.69	1.44	3.70	0.56	2.14	0.57	0.83	0.48	1.55	1.47	1.23	4.97
3.3.2 Trademark applications	7.39	6.85	9.15	5.49	9.35	8.39	22.33	4.49	6.30	8.68	4.00	3.62	8.32	41.87	7.58	10.91	19.86	3.84	49.87	8.11
3.3.3 Design applications	3.99	2.67	3.35	2.69	7.61	5.16	5.16	1.79	1.09	2.55	2.54	0.98	5.61	3.79	2.34	2.14	4.29	0.78	5.55	4.35
<b>IMPACTS</b>																				
Employment impacts																				
4.1.1 Employment in knowledge-intensive activities	14.5	17.5	11.6	14.2	16.2	14.6	15.5	23.4	13.0	13.1	15.8	10.9	14.6	19.2	12.0	13.2	26.4	13.9	20.2	19.9
4.1.2 Employment in innovative enterprises	59.0	77.3	44.1	63.2	58.3	74.1	79.9	60.4	76.5	41.3	60.6	57.1	62.5	70.7	38.7	63.5	50.4	39.2	47.8	56.1
Economic effects																				
4.2.1 Medium & high-tech product exports	55.5	52.7	36.6	65.6	51.1	66.0	37.3	63.1	24.9	43.7	54.2	35.7	49.9	54.1	31.4	39.0	41.6	66.3	55.0	50.9
4.2.2 Knowledge-intensive services exports	75.0	73.6	57.5	51.7	81.0	77.9	61.4	93.8	74.5	53.1	69.9	31.0	62.5	93.3	55.8	22.8	92.6	55.3	52.2	81.2
4.2.3 Sales of new-to-market and new-to-enterprise	13.14	15.07	7.44	14.45	15.00	14.05	8.98	36.94	20.35	21.74	5.91	12.94	13.48	13.80	6.36	11.54	6.35	7.75	6.08	8.21
Environmental sustainability																				
4.3.1 Resource productivity	2.23	2.68	0.80	1.89	1.68	2.76	0.89	2.78	2.01	2.81	3.04	1.80	3.64	1.42	1.41	1.50	3.64	1.54	2.29	4.96
4.3.2 Air emissions in fine particulates (PM2.5) in industry	0.073	0.064	0.315	0.032	0.013	0.019	0.425	0.017	0.191	0.099	0.052	0.197	0.058	0.186	0.844	0.037	0.059	0.091	0.010	0.050
4.3.3 Development of environment-related technologies	12.92	10.05	12.84	12.30	23.12	14.12	7.76	6.74	8.52	11.30	12.93	5.03	9.69	9.59	7.66	9.91	11.36	7.70	9.79	10.15

	AT	PL	PT	RO	SI	SK	ES	SE	AU*	BA*	CS	IE*	MX	NE	NO	RS	CZ	TR	UA*	UK
<b>FORWARD CONDITIONS</b>																				
<b>Human resources</b>																				
1.1.1 New doctorate graduates	0.9	0.2	0.7	0.2	0.7	0.6	1.1	1.0	0.1	0.1	0.6	0.6	0.1	0.1	0.8	0.4	1.7	0.2	0.2	1.6
1.1.2 Population completed tertiary education	42.4	40.6	47.5	23.3	47.9	39.5	40.1	49.3	37.7	24.9	41.5	47.3	37.7	40.4	55.1	33.9	52.3	36.2	N/A	49.4
1.1.3 Lifelong learning	14.6	5.4	12.9	4.9	18.9	4.8	30.5	34.7	9.8	3.3	23.9	N/A	2.6	2.7	19.6	4.8	22.7	5.8	N/A	14.8
<b>Attractive research systems</b>																				
1.2.1 International scientific co-publications	2072	505	1551	322	1769	845	2515	2772	131	248	3743	1253	225	777	2980	580	3961	170	143	1811
1.2.2 Scientific publications among top 10% most cited	1059.3	497.0	918.0	555.9	787.5	451.4	1213.3	1259.7	545.9	315.4	698.3	870.2	407.7	315.7	1145.7	487.4	1436.1	643.8	186.0	1378.4
1.2.3 Foreign doctorate students	36.8	7.9	33.1	4.6	20.1	11.6	25.0	35.6	11.0	N/A	41.7	N/A	39.1	11.3	22.7	7.3	56.6	6.7	7.0	41.1
<b>Digitalisation</b>																				
1.3.1 Broadband penetration	40.0	48.0	71.0	66.0	51.0	37.0	61.0	73.0	16.5	33.0	N/A	27.3	40.0	33.0	59.0	35.0	43.6	26.0	N/A	28.0
1.3.2 Individuals with above basic overall digital skills	33.0	21.0	29.0	9.0	20.0	21.0	48.0	36.0	4.0	5.0	45.0	N/A	8.0	9.0	43.0	12.0	40.0	10.0	N/A	N/A
<b>INVESTMENTS</b>																				
<b>Finance and support</b>																				
2.1.1 R&D expenditure in the public sector	0.96	0.52	0.66	0.19	0.56	0.42	0.94	0.98	N/A	0.12	0.79	0.49	0.28	0.30	1.04	0.56	0.94	0.38	0.20	0.53
2.1.2 Venture capital investments	0.108	0.044	0.056	0.076	0.008	0.034	0.343	0.309	N/A	N/A	N/A	N/A	N/A	N/A	0.330	0.017	0.198	N/A	0.085	0.458
2.1.3 Direct and indirect government support for business R&D	0.27	0.13	0.24	0.01	0.22	0.04	0.05	0.12	N/A	0.00	0.24	0.09	0.01	0.00	0.23	0.05	0.03	0.19	0.05	0.41
<b>Firm investments</b>																				
2.2.1 R&D expenditure in the business sector	2.22	0.88	0.92	0.28	1.57	0.49	1.97	2.55	N/A	0.07	1.68	4.91	0.10	0.19	1.24	0.35	2.13	0.71	0.28	1.19
2.2.2 Non-R&D innovation expenditure	0.38	0.57	0.37	0.05	0.10	0.79	0.46	0.46	N/A	0.01	0.56	N/A	1.01	0.14	0.65	3.57	N/A	0.35	0.28	0.44
2.2.3 Innovation expenditures per person employed	693.2	297.4	215.5	82.9	390.5	337.1	804.0	1195.5	N/A	237	376.7	N/A	128.2	220.5	602.6	812.9	N/A	312.0	N/A	558.3
<b>Use of information technologies</b>																				
2.3.1 Enterprises providing ICT training	18.0	18.0	23.0	6.0	26.0	16.0	38.0	32.0	N/A	15.0	25.0	N/A	12.0	26.0	33.0	16.0	N/A	11.0	8.8	24.0
2.3.2 Employed ICT specialists	4.5	3.5	4.7	2.6	4.8	4.3	7.4	8.0	N/A	N/A	4.0	N/A	2.3	2.5	5.4	3.3	5.5	1.3	N/A	5.6
<b>INNOVATION ACTIVITIES</b>																				
<b>Innovators</b>																				
3.1.1 SMEs with product innovations	30.4	14.2	24.9	6.7	34.8	14.1	37.8	38.1	22.8	38.6	27.8	N/A	15.5	42.9	44.3	39.9	33.5	18.9	4.4	24.9
3.1.2 SMEs with business process innovations	50.2	25.5	43.4	5.3	41.6	28.1	54.2	51.4	31.1	34.8	41.9	N/A	33.5	41.3	51.5	44.3	50.5	29.2	N/A	17.7
<b>Linkages</b>																				
3.2.1 Innovative SMEs collaborating with others	16.4	6.7	6.6	1.5	13.1	7.5	27.6	15.1	8.9	N/A	22.5	N/A	6.2	9.3	37.4	7.4	9.7	5.8	4.7	23.6
3.2.2 Public-private co-publications	498.3	74.4	179.6	53.9	353.7	111.4	499.5	498.8	12.4	38.3	705.0	166.1	37.2	62.8	615.6	74.4	812.9	20.6	24.1	280.0
3.2.3 Job-to-job mobility of Human Resources in S&T	7.3	6.8	7.0	1.4	7.3	3.4	8.4	4.0	N/A	N/A	8.9	N/A	5.0	3.4	9.2	5.7	10.2	7.1	N/A	11.3
<b>Intellectual assets</b>																				
3.3.1 PCT patent applications	4.62	0.51	0.99	0.18	1.58	0.52	7.54	9.31	N/A	0.07	2.65	9.16	0.31	0.60	3.08	0.30	6.98	0.98	0.55	3.03
3.3.2 Trademark applications	12.49	6.07	8.43	3.01	9.20	5.00	9.26	10.01	0.48	0.40	4.13	2.34	0.87	0.47	3.14	1.10	10.75	0.68	0.57	4.94
3.3.3 Design applications	7.61	5.63	3.15	0.80	2.18	1.80	5.04	3.78	0.00	0.01	0.04	0.87	0.02	0.00	0.67	0.03	6.02	0.10	0.05	2.11
<b>IMPACTS</b>																				
<b>Employment impacts</b>																				
4.1.1 Employment in knowledge-intensive activities	15.3	11.1	13.6	8.2	17.2	11.9	16.8	20.8	8.8	N/A	16.9	34.1	7.7	12.0	16.2	10.8	20.3	6.8	12.9	20.8
4.1.2 Employment in innovative enterprises	68.6	42.3	59.1	12.3	54.7	42.8	72.8	70.0	42.0	50.5	66.5	N/A	41.5	69.5	72.2	69.6	77.6	40.0	N/A	66.1
<b>Economic effects</b>																				
4.2.1 Medium & high-tech product exports	56.1	48.8	40.9	55.2	60.7	67.8	44.5	53.1	11.5	25.8	8.7	63.5	64.9	20.5	16.1	43.1	69.1	60.9	25.0	52.1
4.2.2 Knowledge-intensive services exports	50.9	48.7	47.8	54.3	41.7	45.8	82.9	84.0	27.0	18.7	71.8	79.0	38.9	39.0	83.7	59.8	72.3	50.3	50.5	88.6
4.2.3 Sales of new-to-market and new-to-enterprise	12.99	7.50	14.50	5.24	12.29	14.94	19.33	12.87	40.10	9.06	5.56	N/A	3.52	7.16	6.03	11.83	14.33	10.00	1.10	15.53
<b>Environmental sustainability</b>																				
4.3.1 Resource productivity	1.95	1.35	1.40	0.74	2.03	1.77	1.03	1.49	1.21	0.86	2.38	N/A	1.26	N/A	1.76	0.67	4.57	1.74	N/A	3.84
4.3.2 Air emissions in fine particulates (PM2.5) in industry	0.024	0.314	0.824	0.237	0.135	0.057	0.074	0.062	N/A	N/A	0.341	N/A	N/A	N/A	0.150	0.794	0.011	N/A	N/A	0.117
4.3.3 Development of environment-related technologies	13.96	6.46	7.73	8.64	9.05	12.68	13.03	12.36	28.63	37.27	7.36	5.95	18.99	9.38	13.44	12.09	7.77	6.51	11.72	11.53

### Spain, Lithuania and Italy are all Moderate Innovator.

For the Moderate Innovators, performance has been increasing continuously since 2015. Compared to 2015, average performance has improved by 14.3 percentage points, i.e. at a higher rate than the Strong Innovators and the Innovation Leaders. The performance gap to the Strong Innovators has become smaller over time, which is an indication of converging performance between the two groups. For almost all Moderate Innovators performance has increased. For Estonia (24.4%-points), Greece (24.2%-points), Lithuania (19.9%-points), Czechia (19.8%-points), and Italy (17.5%-points), performance has increased faster than that of the EU. For the other Moderate Innovators performance increased at a rate below that of the EU. For Spain (8.6%-points), performance increased strongly in 2022 (5.5%-points) after two years of performance declines. The increase in 2022 was due to improved performance on SMEs with product innovations, SMEs with business process innovations, Knowledge-intensive services exports, and Sales of innovative products.



## SPAIN



88.8



Change over time: 8.6

89.7 Moderate Innovators

Spain	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
<b>SUMMARY INNOVATION INDEX</b>	<b>88.8</b>	<b>8.6</b>	<b>5.5</b>
<b>Human resources</b>	<b>127.6</b>	<b>0.0</b>	<b>0.0</b>
Doctorate graduates	100.0	0.0	0.0
Population with tertiary education	145.9	0.0	0.0
Lifelong learning	140.0	0.0	0.0
<b>Attractive research systems</b>	<b>96.6</b>	<b>15.0</b>	<b>5.3</b>
International scientific co-publications	93.4	50.3	13.8
Most cited publications	92.5	-2.4	1.0
Foreign doctorate students	108.5	20.5	6.9
<b>Digitalisation</b>	<b>149.8</b>	<b>12.7</b>	<b>12.7</b>
Broadband penetration	146.2	24.2	24.2
People with above basic overall digital skills	154.5	0.0	0.0
<b>Finance and support</b>	<b>74.5</b>	<b>7.7</b>	<b>6.3</b>
R&D expenditures in the public sector	75.8	3.2	12.9
Venture capital expenditures	99.6	49.6	18.0
Government support for business R&D	38.8	-29.4	-14.6
<b>Firm investments</b>	<b>62.4</b>	<b>16.5</b>	<b>6.0</b>
R&D expenditure in the business sector	49.3	7.8	6.2
Non-R&D Innovation expenditures	81.3	18.4	-2.6
Innovation expenditures per employee	58.7	22.9	14.5
<b>Use of information technologies</b>	<b>91.3</b>	<b>-6.5</b>	<b>-6.5</b>
Enterprises providing ICT training	100.0	-12.5	-12.5
Employed ICT specialists	81.8	0.0	0.0
<b>Innovators</b>	<b>50.1</b>	<b>19.4</b>	<b>20.6</b>
Product innovators (SMEs)	59.6	42.3	22.9
Business process innovators (SMEs)	41.8	-4.9	18.1
<b>Linkages</b>	<b>88.5</b>	<b>39.8</b>	<b>-6.7</b>
Innovative SMEs collaborating with others	57.0	7.5	3.6
Public-private co-publications	114.7	60.9	18.2
Job-to-job mobility of HRST	102.1	58.8	-26.5
<b>Intellectual assets</b>	<b>78.1</b>	<b>-4.1</b>	<b>1.0</b>
PCT patent applications	64.2	-4.7	2.0
Trademark applications	109.8	7.7	3.0
Design applications	63.8	-12.4	-1.7
<b>Employment impacts</b>	<b>58.8</b>	<b>-5.9</b>	<b>5.6</b>
Employment in knowledge-intensive activities	81.8	0.0	0.0
Employment in innovative enterprises	40.5	-11.3	10.7
<b>Sales impacts</b>	<b>96.6</b>	<b>29.1</b>	<b>26.6</b>
Medium and high-tech goods exports	71.9	-3.3	-5.1
Knowledge-intensive services exports	63.9	46.9	42.8
Sales of innovative products	169.2	50.8	49.3
<b>Environmental sustainability</b>	<b>102.4</b>	<b>-10.6</b>	<b>-9.3</b>
Resource productivity	136.6	0.1	-19.3
Air emissions by fine particulate matter	92.5	5.9	-1.3
Environment-related technologies	83.5	-37.6	-12.2

The second column shows performance relative to that of the EU in 2022. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2022; light green: between 100% and 125%; yellow: between 70% and 100%; orange: below 70%. Normalised performance uses the data after a possible imputation of missing data and transformation of the data. The next columns show performance change over time between 2015 and 2022 and between 2021 and 2022, with scores relative to those of the EU in 2015. Positive performance changes are shown in green, negative performance changes in red.

**SPAIN** is a **Moderate Innovator** with performance at 88.8% of the EU average. Performance is below the average of the Moderate Innovators (89.7%). Performance is increasing (8.6%-points) at a rate lower than that of the EU (9.9%-points). The country's performance gap to the EU is becoming larger.

### Relative strengths

- Sales of innovative products
- People with above basic overall digital skills
- Broadband penetration
- Population with tertiary education
- Lifelong learning

### Relative weaknesses

- Government support for business R&D
- Employment in innovative enterprises
- Business process innovators
- R&D expenditure in the business sector
- Innovative SMEs collaborating with others

### Strong increases since 2015

- Public-private co-publications
- Job-to-job mobility of HRST
- Sales of innovative products

### Strong decreases since 2015

- Environment-related technologies
- Government support for business R&D
- Enterprises providing ICT training

### Strong increases since 2021

- Sales of innovative products
- Knowledge-intensive services exports
- Broadband penetration

### Strong decreases since 2021

- Job-to-job mobility of HRST
- Resource productivity
- Government support for business R&D

## LITHUANIA



83.7



Change over time: 19.9

89.7 Moderate Innovators

Lithuania	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
<b>SUMMARY INNOVATION INDEX</b>	<b>83.7</b>	<b>19.9</b>	<b>6.3</b>
<b>Human resources</b>	<b>111.6</b>	<b>-4.8</b>	<b>0.0</b>
Doctorate graduates	55.5	-11.4	0.0
Population with tertiary education	199.7	0.0	0.0
Lifelong learning	74.4	0.0	0.0
<b>Attractive research systems</b>	<b>53.1</b>	<b>40.0</b>	<b>4.6</b>
International scientific co-publications	72.0	67.8	14.6
Most cited publications	51.5	34.8	13.1
Foreign doctorate students	32.1	25.6	-23.3
<b>Digitalisation</b>	<b>104.2</b>	<b>1.6</b>	<b>1.6</b>
Broadband penetration	117.9	3.0	3.0
People with above basic overall digital skills	86.4	0.0	0.0
<b>Finance and support</b>	<b>76.0</b>	<b>25.7</b>	<b>18.6</b>
R&D expenditures in the public sector	72.7	-17.7	6.5
Venture capital expenditures	121.4	101.4	50.4
Government support for business R&D	18.3	6.3	2.3
<b>Firm investments</b>	<b>79.6</b>	<b>16.7</b>	<b>10.3</b>
R&D expenditure in the business sector	33.8	24.0	9.3
Non-R&D Innovation expenditures	170.9	4.6	30.3
Innovation expenditures per employee	47.1	21.8	-8.9
<b>Use of information technologies</b>	<b>65.2</b>	<b>16.3</b>	<b>9.8</b>
Enterprises providing ICT training	62.5	31.3	18.8
Employed ICT specialists	68.2	0.0	0.0
<b>Innovators</b>	<b>113.7</b>	<b>53.6</b>	<b>4.8</b>
Product innovators (SMEs)	115.5	59.4	0.2
Business process innovators (SMEs)	112.1	47.3	9.7
<b>Linkages</b>	<b>141.6</b>	<b>65.8</b>	<b>6.6</b>
Innovative SMEs collaborating with others	126.3	-10.1	10.7
Public-private co-publications	71.3	51.5	0.3
Job-to-job mobility of HRST	183.3	138.2	5.9
<b>Intellectual assets</b>	<b>69.1</b>	<b>24.6</b>	<b>8.9</b>
PCT patent applications	37.1	4.4	-2.0
Trademark applications	125.3	62.5	21.1
Design applications	53.7	19.8	12.7
<b>Employment impacts</b>	<b>101.0</b>	<b>16.1</b>	<b>7.6</b>
Employment in knowledge-intensive activities	83.1	0.0	0.0
Employment in innovative enterprises	115.2	30.8	14.5
<b>Sales impacts</b>	<b>51.1</b>	<b>14.4</b>	<b>6.9</b>
Medium and high-tech goods exports	60.5	11.5	-2.2
Knowledge-intensive services exports	14.0	7.5	7.6
Sales of innovative products	87.1	26.0	18.0
<b>Environmental sustainability</b>	<b>80.4</b>	<b>2.4</b>	<b>-4.8</b>
Resource productivity	42.1	5.0	-6.6
Air emissions by fine particulate matter	113.2	22.8	4.1
Environment-related technologies	69.4	-23.9	-14.1

The second column shows performance relative to that of the EU in 2022. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2022, light green: between 100% and 125%, yellow: between 70% and 100%, orange: below 70%. Normalised performance uses the data after a possible imputation of missing data and transformation of the data. The next columns show performance change over time between 2015 and 2022 and between 2021 and 2022, with scores relative to those of the EU in 2015. Positive performance changes are shown in green, negative performance changes in red.

**LITHUANIA** is a **Moderate Innovator** with performance at 83.7% of the EU average. Performance is below the average of the Moderate Innovators (89.7%). Performance is increasing (19.9%-points) at a rate higher than that of the EU (9.9%-points). The country's performance gap to the EU is becoming smaller.

### Relative strengths

- Population with tertiary education
- Job-to-job mobility of HRST
- Non-R&D Innovation expenditures
- Innovative SMEs collaborating with others
- Trademark applications

### Relative weaknesses

- Knowledge-intensive services exports
- Government support for business R&D
- Foreign doctorate students
- R&D expenditure in the business sector
- PCT patent applications

### Strong increases since 2015

- Job-to-job mobility of HRST
- Venture capital expenditures
- International scientific co-publications

### Strong decreases since 2015

- Environment-related technologies
- R&D expenditures in the public sector
- Doctorate graduates

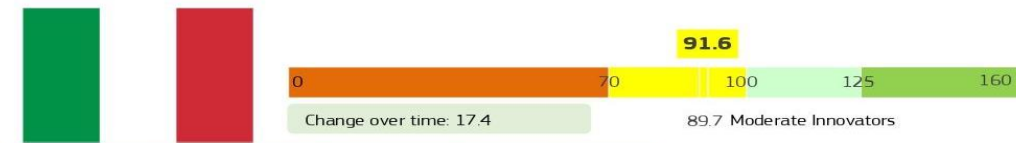
### Strong increases since 2021

- Venture capital expenditures
- Non-R&D Innovation expenditures
- Trademark applications

### Strong decreases since 2021

- Foreign doctorate students
- Environment-related technologies
- Innovation expenditures per employee

## ITALY



Italy	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
<b>SUMMARY INNOVATION INDEX</b>	<b>91.6</b>	<b>17.4</b>	<b>-2.9</b>
<b>Human resources</b>	<b>64.1</b>	<b>-4.8</b>	<b>0.0</b>
Doctorate graduates	85.2	-11.4	0.0
Population with tertiary education	21.1	0.0	0.0
Lifelong learning	90.0	0.0	0.0
<b>Attractive research systems</b>	<b>98.6</b>	<b>21.2</b>	<b>4.7</b>
International scientific co-publications	87.1	51.5	15.1
Most cited publications	111.8	7.8	1.6
Foreign doctorate students	87.9	22.4	1.5
<b>Digitalisation</b>	<b>75.2</b>	<b>9.5</b>	<b>9.5</b>
Broadband penetration	66.7	18.2	18.2
People with above basic overall digital skills	86.4	0.0	0.0
<b>Finance and support</b>	<b>79.6</b>	<b>30.0</b>	<b>-3.6</b>
R&D expenditures in the public sector	66.7	1.6	8.1
Venture capital expenditures	65.1	7.0	5.2
Government support for business R&D	115.8	91.9	-28.5
<b>Firm investments</b>	<b>82.1</b>	<b>26.2</b>	<b>3.9</b>
R&D expenditure in the business sector	59.5	7.8	0.8
Non-R&D Innovation expenditures	85.9	3.7	-27.0
Innovation expenditures per employee	98.0	66.2	37.8
<b>Use of information technologies</b>	<b>68.5</b>	<b>16.3</b>	<b>-13.0</b>
Enterprises providing ICT training	68.8	31.3	-25.0
Employed ICT specialists	68.2	0.0	0.0
<b>Innovators</b>	<b>115.2</b>	<b>47.2</b>	<b>-37.6</b>
Product innovators (SMEs)	112.3	32.5	-35.0
Business process innovators (SMEs)	117.8	62.8	-40.4
<b>Linkages</b>	<b>90.6</b>	<b>53.2</b>	<b>-2.1</b>
Innovative SMEs collaborating with others	113.9	79.2	-16.2
Public-private co-publications	143.1	82.6	-21.5
Job-to-job mobility of HRST	50.0	17.6	0.0
<b>Intellectual assets</b>	<b>105.4</b>	<b>6.0</b>	<b>0.4</b>
PCT patent applications	78.3	2.1	0.4
Trademark applications	107.1	24.0	4.4
Design applications	140.5	-3.0	-2.6
<b>Employment impacts</b>	<b>107.1</b>	<b>10.1</b>	<b>-13.3</b>
Employment in knowledge-intensive activities	101.3	0.0	0.0
Employment in innovative enterprises	111.7	19.4	-25.6
<b>Sales impacts</b>	<b>88.6</b>	<b>14.7</b>	<b>-0.8</b>
Medium and high-tech goods exports	86.7	-3.2	-4.6
Knowledge-intensive services exports	79.5	21.7	28.3
Sales of innovative products	102.8	30.0	-29.6
<b>Environmental sustainability</b>	<b>117.6</b>	<b>5.8</b>	<b>-1.0</b>
Resource productivity	187.9	37.4	0.7
Air emissions by fine particulate matter	104.8	7.7	0.7
Environment-related technologies	67.2	-17.9	-4.4

The second column shows performance relative to that of the EU in 2022. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2022; light green: between 100% and 125%; yellow: between 70% and 100%; orange: below 70%. Normalised performance uses the data after a possible imputation of missing data and transformation of the data. The next columns show performance change over time between 2015 and 2022 and between 2021 and 2022, with scores relative to those of the EU in 2015. Positive performance changes are shown in green, negative performance changes in red.

ITALY is a **Moderate Innovator** with performance at 91.6% of the EU average. Performance is above the average of the Moderate Innovators (89.7%). Performance is increasing (17.4%-points) at a rate higher than that of the EU (9.9%-points). The country's performance gap to the EU is becoming smaller.

### Relative strengths

- Resource productivity
- Public-private co-publications
- Design applications
- Business process innovators
- Government support for business R&D

### Relative weaknesses

- Population with tertiary education
- Job-to-job mobility of HRST
- R&D expenditure in the business sector
- Venture capital expenditures

### Strong increases since 2015

- Government support for business R&D
- Public-private co-publications
- Innovative SMEs collaborating with others

### Strong decreases since 2015

- Environment-related technologies
- Doctorate graduates
- Medium and high-tech goods exports

### Strong increases since 2021

- Innovation expenditures per employee
- Knowledge-intensive services exports
- Public-private co-publications

### Strong decreases since 2021

- Business process innovators
- Product innovators
- Sales of innovative products

## 2.2. Audience

The first phase of the EPICENTRE Project focused on corporate and stakeholders from the project's key sectors: food, digital, health and fintech.

We have adopted a definition of corporate and companies that should be involved in the project and also a list of categories we can engage in the process. To facilitate the involvement of a wide range of realities, the clusters involved made use of the collaboration of their partner network.

For instance, CBIOS has been supported by the Enterprise Europe Network, the Council of European Bioregion, ALISEI - Italian Cluster Life Sciences, among others, but also extended the involvement of other external stakeholders such as EIT Health and I3P Accelerator, Business Sweden,

In order to broaden the participation of companies and obtain support in identifying innovation trends and refine and customise the questionnaires according to the needs of the project, CBIOS also involved SMAU, as experts in the field of open innovation, that is a company whose aim is to organise national and international events to promote open innovation and interaction between the world of corporate and start-ups. This collaboration allowed us to reach a large number of companies and also to receive extensive feedback in terms of Eols, interviews and surveys.

In addition, CLDI has participated in the Cluster Meet Regions in Barcelona organized by ECCP and Acció and presented EPICENTRE and the Call Expression for Interest for Corporates. As well as, individual meetings with specific corporates from Agrifood, Health and Digital were arranged in order to explore their needs and the possibility of joining the EPICENTRE project.

Smart Food Cluster managed by Lithuanian Food Exporters Association (LitMEA) has participated in the Startup Village Networking event - innovative and resilient regional development organized by Agrifood Lithuania DIH and presented EPICENTRE and Open calls and Funding opportunities for Startups and SMEs in order to increase the dissemination of information and invite start-ups and SMEs from across Europe to participate in Open calls. Also individual meetings with clusters members cooperates and other SMEs and start-ups from Agri-food, Digital were arranged for collect information about their needs, challenges and opportunities for joining the EPICENTRE project activities.

### 2.3. Overview

Epicentre project was created to promote cross-sector collaboration between corporate and Sme's and innovative startups in Europe. To outline the challenges of the project, we started with an analysis of the state of open innovation.

#### ***What are the most used open innovation model?***

- 97% do use Venture Client (for H1 innovation goals) while the remaining 3% is planning to implement it.
- CVC is adopted by 92% of the companies (the tool is designed primarily for addressing H2 and H3 innovations).
- Innovation Outposts and Antennas are deployed in the main tech clusters by 80% of the companies.
- Intrapreneurship is adopted by 70% of the respondents and this number is expected to increase in the near future.
- M&A is used by 75% of the companies, while an additional 8% are expected to join the group of startup acquirers.
- Startup Accelerators are now used only by 61% of the companies. 11% of them are planning to dismiss (versus 6% that are planning to introduce it).
- Venture Builders are confirmed to be on the rise. 67% of the respondents are already somewhat using this tool and 22% plan to introduce it (though 11% are considering downsizing). Multiple approaches emerged from the discussion that suggest that the model is still in the early days

#### ***What are the barriers to corporate-startup collaboration?***

Top-level buy-in is universally considered as the main enabler of open innovation. Main barriers to actual implementation are procedural and cultural: rigid internal processes (according to 50% of the respondents) and a perceived corporate culture of risk aversion (47%).

Business units are increasingly more involved in innovation processes: there are no longer misconceptions about what startups are, while access to high-quality startups does not appear to be a problem anymore for the top companies.<sup>1</sup>

Having a dedicated budget for supporting POCs and deployments might compromise the open innovation efforts: 28% of the respondents lamented having limited resources to support startups.

On the external side, the pandemic is not considered a blocking factor anymore. Innovation leaders are more worried about the current economic situation (as made evident by high inflation rates, rising energy costs, and the risk of a global recession), and the general climate of political uncertainty at global scale. Not surprisingly the potential (negative) impact of legislation and regulation, both at national and supranational level, is considered a concerning factor.

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1

Source: Open Innovation Outlook 2023 - Mind the Bridge

### What about innovation budget in 2023?

Innovation budgets did not take a hit in 2022, with only 3% of the Corporate Startup Stars — the companies with the most advanced innovation programmes — cutting their spending.

In 2022, only 6% are planning cuts. Some 32% will increase their innovation budget (same percentage of this year), while 62% plan to maintain the same level of spending (vs. 65% in 2021).

Beyond their home country, innovation leaders look for startups in the main world’s technology hubs. According to 80-90% of the respondents Silicon Valley and the top European hubs (i.e.. London, Paris, Berlin, Amsterdam, Helsinki, Madrid and Barcelona) are still top of the list for where companies go to search for innovation.

Israel, the East Coast (New York and Boston) are the other “must have” locations. Some 60-65% of the companies we spoke to are already active in these regions and the remaining 17% and 11% (respectively) are planning to be in the near future.

Latin America, China, and India are also becoming increasingly attractive for global innovation leaders, while MENA and South Korea, currently approached by approximately one third of the respondents, are in the future plans of about one fifth of innovation leaders.



## Open Innovation in Italy<sup>2</sup>

1. Almost all innovation leaders have put (innovation) boots on the ground in Silicon Valley (plus Israel), while more corporates are expanding their footprint by establishing Innovation Antennas and Outposts in emerging global tech hubs such as South Korea.
2. Intrapreneurship programs are being revamped. Traditionally developed as HR tools, they are going beyond mere educational goals and turning into a source of origination to generate deal flow.
3. Due to growing concerns about financial sustainability and results, Corporate Accelerators are increasingly being restructured, delegated to third-parties, or dismissed entirely. New models such as the Venture Builder are still under experimentation.
4. The Venture Client model, i.e. the process of acquiring products and solutions from a startup, is heavily adopted, but requires a global reach to be effective.
5. Typically, the Venture Client model requires a long-list of scouting prospects (1,000-5,000 per year), of which about 1% move into commercial agreements for full-scale deployment.
6. More companies are launching CVC funds, though with different approaches. Some innovation leaders are spinning off their CVCs, while others are considering indirect investments by participating as LPs in third-party funds.
7. Apart from global tech leaders, established corporates are not particularly active on the Startup M&A front. Acquisitions remain relatively sporadic, especially for European and Italian corporates.

As of December 2021, Italy hosts 471 scaleups that raised \$5.2B in equity since inception. Italy's closest contender - Spain - hosts 1.5 times more scaleups, which raised 2.5 more capital. Compared to the previous year, Italy narrowed the gap a bit, but it remains significant.

Compared to the size of its overall economy, Italy's scaleup economy is among the lowest performers in Europe, with only 0.8 scaleups every 100k inhabitants, and just 0.02% of the country GDP fueling the local scaleup economy. Nevertheless, there are signs of increased maturity for the Italian ecosystem.

In 2022, we recorded the two large rounds of Scalapay and Casavo, which raised respectively \$0.2B and \$0.1B - a sign of potential further growth of the Italian scaleup economy. Still, the Italian scaleup economy remains relatively downsized. As a consequence, Italian companies must look abroad to scout for innovation. To find abundant solutions ready to be deployed, Italian companies should

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<sup>2</sup> Source: SMAU \_ MTB - Global Open Innovation Trends

activate tech scouting in the most advanced ecosystems (mainly Silicon Valley and Israel) without missing out on other expanding hubs in the US (e.g. New York, Los Angeles, Austin, Boston, etc.), South Korea (currently thriving in new digital tech trends such as the “metaverse”), the Middle East (especially the Dubai hub, whose government is contributing to foster a vibrant scaleup ecosystem), as well as European top hubs (London, Paris, Berlin, Barcelona and Madrid, etc.).

Corporates that once started their Open Innovation journey by increasing their strategic awareness and setting plans and processes, while making initial attempts at some light-touch tools and initiatives, are now increasing their depth of operations and slowly reducing the gap with global innovation leaders. Almost all Italian leaders have a dedicated Open Innovation unit, which only in some cases retains strong ties with traditional R&D departments.

About one third of Italian leaders still rely on third parties for their startup programs, though we record an increase in deal flow-oriented intrapreneurship programs. Relatively only a few corporates (20%) established large, structured CVC funds (\$50/100M+), though we record some relevant off-balance investments, e.g. the recent \$27M investment by Poste Italiane in the Italian fintech Scalapay.

Startup acquisitions remain sporadic (around 1 per year). Innovation awareness and dedicated innovation units are now the norm for about two thirds of Top Italian SMEs. A few (12%) are making their first steps abroad by establishing an innovation presence in Silicon Valley. Few companies (16% of the sample) participate in third-party acceleration programs.

### **Open innovation in Spain**

Open innovation has emerged as a significant trend in Spain, with a growing number of companies embracing this approach to drive innovation and growth. One of the main drivers of the open innovation trend in Spain is the country's thriving startup ecosystem. Spain has a vibrant and rapidly growing startup scene, with many innovative companies that are leveraging open innovation to develop new products and services. Many startups in Spain have embraced open innovation as a way to overcome resource constraints, gain a competitive advantage, and drive innovation.

Another factor driving the open innovation trend in Spain is the government's commitment to promoting innovation and technology. The Spanish government has made significant investments in research and development and is actively promoting collaboration between academia and industry. As a result, there are a growing number of initiatives and programs designed to promote open innovation and collaboration.

### **Analysis of Digital Innovation trend in Spain<sup>3</sup>**

Over the last two decades, successive Spanish governments have introduced programmes for digital development, in line with European digital agendas, which have provided a framework for driving forwards a process of infrastructure deployment and development of a business and technology

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<sup>3</sup> Digital-Spain-2025-Exec-Summary



ecosystem in a key area for economic productivity, territorial cohesion and social progress. Thus, Plan Info XXI, Programa España.es, Plan Avanza and, lastly, the Digital Agenda for Spain of February 2013 have allowed a strategic approach, which has guided a major public and private investment effort in this field.

The majority of these digital strategies and agendas have been drawn up around **four areas of action**:

- (1) the deployment of networks and services for digital connectivity.
- (2) the digitalisation of the economy.
- (3) improving electronic government.
- (4) training in digital skills.

Although significant progress has been made in every area, public and private investment has clearly focused on extending physical telecommunications networks.

Spain is in a very good position to tackle the next phase of the country's digital transformation process, with a digital infrastructure network which is among the best in the world, leading companies in key sectors (health, food and agriculture, mobility, tourism, finance), modern cities and a diverse and dynamic society which is agile in adapting to change. Spain is also relatively well placed with regard to the digitalisation of government and has tremendous potential in the application of the new technologies to information management and the implementation of public policy.

However, progress has been more limited in the area of digitalisation of industry and business - especially SMEs - and also in relation to R&D+i and improving the population's digital skills. Looking to the future, these are three key levers for the digital transformation to result in increased productivity, better working conditions, better connectivity and better opportunities for development and for inclusion of the whole of society throughout the country. Furthermore, there are areas which still do not have reliable, high-quality, digital connectivity, both in rural areas and in certain industries, which creates social and regional divides, holds back the digitalisation of industry and limits the quality of the experience at tourist destinations.

The exceptional situation resulting from the COVID-19 pandemic has accelerated the process of digitalisation, highlighting its strengths but also its deficiencies, both from an economic and from a social and territorial point of view. Indeed, during the months of restricted mobility, the capacity and resilience of the telecommunications networks to handle an extreme situation of super-connectivity has been made clear, with increases compared to 2019 of up to 50% in fixed-line voice traffic, 30% in mobile voice traffic, 20% in fixed-line data traffic and 50% in mobile data traffic. Furthermore, the role of digital audiovisual services as a widespread consumer good in leisure and entertainment has been consolidated, being an accessible alternative for continuing with those activities affected by the restrictions on physical mobility. Teleworking has also increased significantly and impetus has been given to the digitalisation of education, with radical changes in methods and content.

These processes have brought to the fore the need to tackle the outstanding challenges, urgently, in order to strengthen the social, territorial and ecological cohesion of our country, ensuring that the whole of society has access to the opportunities provided by the new digital economy. That requires a particularly significant investment effort in the coming years, to strengthen digital connectivity throughout the country, helping to reduce the divide between urban and rural areas. But also to ensure the availability of adequate tools and equipment for the whole population, to give impetus to digital training, looking to the future, for workers, business owners, students, teachers and the whole education community, and to support the digitalisation of companies, reorientating the production model towards a more resilient and sustainable economy, increasing productivity, but also improving well-being and inclusion.

The above represents a huge challenge in a business fabric dominated by small and medium- sized companies, whose capacities for modernisation and production linkage are still limited, and which, on the whole, do not have the necessary resources and competences to invest in digital technologies and in the organisational changes which make it possible to incorporate their use into production, distribution and management processes. Hence the relevance of the public policies defined by Digital Spain 2025 to promote growth through productivity based on digital technologies, such as: (1) incentives to modernise; (2) incentives for cooperation between companies; and (3) the promotion of entrepreneurship to release latent potential for technological and organisational innovation.

In addition to these challenges, Europe finds itself on the front line of the current, formidable, economic and geopolitical challenges, in which the multinational technology majors play a very important role. It is, therefore, essential for it to develop its own digital capacities, in order to maintain strategic independence and contribute positively to the development of suitable, responsible, just and sustainable solutions at the global level. In this context, the European Commission has published the communication “Shaping Europe’s digital future”.

The European strategy contains a set of measures for a digital transformation which benefits everyone and reflects the best of Europe: open, just, diverse, democratic and self-confident. The strategy presents a European society propelled by digital solutions which put people first, open up new opportunities for companies and give impetus to the development of reliable technology that fosters an open society and a dynamic and sustainable economy.

**Digital Spain 2025** contains a collection of measures, reforms and investments, organised around ten strategic axes, aligned with the digital policies defined by the European Commission for the new period. The actions are aimed at promoting a more sustainable and inclusive form of growth, propelled by synergies between digital transitions and ecology, which reaches the whole of society and reconciles the new opportunities offered by the digital world with respect for constitutional values and the protection of individual and collective rights:

1. Ensuring adequate digital connectivity for 100% of the population, helping to eliminate the digital divide between rural and urban areas (2025 goal: 100% of the population with coverage of 100 Mbps)

2. Continuing to lead Europe in the deployment of 5G technology, incentivising its contribution to increasing economic productivity, social progress and territorial cohesion (2025 goal: 100% of the radio spectrum ready for 5G).
3. Strengthening the digital skills of workers and of the public as a whole (2025 goal: 80% of people with basic digital skills, of which 50% will be women).
4. Strengthening Spain's cybersecurity capacity, consolidating its position as one of Europe's centres of business capacity (2025 goal: 20,000 new specialists in cybersecurity, AI and data).
5. Promoting the digitalisation of public administrations (2025 goal: 50% of public services available on mobile apps).
6. Accelerating the digitalisation of companies, with a special focus on SMEs and start-ups (2025 goal: 25% of SME business volume provided by e-commerce).
7. Accelerating the digitalisation of the production model by means of projects which drive sectoral transformation and produce structural effects (2025 goal: 10% reduction in CO2 emissions as a consequence of digitalisation).
8. Making Spain more attractive as a European business, work and investment platform in the audiovisual field (2025 goal: 30% increase in audiovisual production in Spain).
9. Supporting the transition to a data economy, safeguarding security and privacy and making the most of the opportunities offered by artificial intelligence (2025 goal: 25% of companies using AI and big data).
10. Guaranteeing citizens' rights in the new digital environment (2025 goal: a national charter of digital rights).

Furthermore, Digital Spain 2025 proposes a cross-cutting objective closely aligned with the Sustainable Development Goals (SDGs) and the 2030 Agenda: making a significant contribution to closing the various digital divides, which have become wider in recent years for socio-economic, gender-related, generational, geographic and environmental reasons.

Digital Spain 2025, as a tool for the technological and digital transformation of Spain, will also give impetus to the other great transition which our society must tackle: the ecological transition to a new economic and social model based on sustainability. In that regard, digitalisation is an essential element that will help us to build a more resilient and cleaner economy, based, inter alia, on energy efficiency, sustainable mobility and the circular economy. It is a key process for achieving the ambitious goals for decarbonisation, reducing greenhouse gas emissions, uptake of renewable energy and energy efficiency set out in the Integrated National Energy and Climate Plan (Plan Nacional Integrado de Energía y Clima: PNIEC) 2021-2030.

Digital Spain 2025 is also aligned with the Spanish Science, Technology and Innovation Strategy, given its objective of responding to the challenges faced by strategic national sectors through R&D+i.

### **Open innovation in Lithuania**

Lithuania has retained its 19th place in the European Union in the European Innovation Scoreboard 2022 published by the European Commission, and has reached its highest level in terms of innovation ecosystem development since 2015. Innovation, its development and promotion is an essential direction of the Lithuanian economy, a guarantee for competitiveness and welfare growth of the country.

The fundamental strategic document setting guidelines for innovation policy in Lithuania is the Innovation Development Programme. The Programme has been drafted with a view to mobilizing the state resources for the improvement of Lithuania's innovativeness and development of competitive economy based on high level knowledge, high technologies, qualified human resources and smart specialization. The strategic goal of the Programme – to enhance competitiveness of the Lithuanian economy through the development of the effective innovation system promoting economic innovation.

#### ***Objectives of the Lithuanian Innovation Development Programme:***

- to develop innovative society by developing new knowledge and its application;
- to enhance business innovation potential of business;
- to promote the creation of value networking, development and internationalization;
- to increase efficiency of innovation policy-making and implementation and promote innovation in the public sector.

An efficient innovation ecosystem allows creating value that would be unobtainable with ecosystem participants working separately. It emphasizes the importance of linkages among ecosystem stakeholders to attain more. Each participant in the innovation cycle, in one way or another, influences the innovation process from idea to a new product in the market. The Innovation Ecosystem logic is built on the knowledge pyramid concept stressing each stakeholder's input into the collaboration network.

The role of educational institutions within the innovation ecosystem is vital. Lithuanians can brag about the highest number of 30-34 year aged persons with higher education among other EU countries. EU structural funds investments in science, technology, and innovation are concentrated in the priorities of Smart specialization Strategy (S3), which has a significant impact on the Lithuanian economy. In addition to direct non-repayable support, stakeholders of the innovation ecosystem can benefit from the public sector's financial engineering instruments. Almost half of the total (more than 500 M EUR) venture capital investments came from the public sector and foreign institutions. Lithuania was distinguished in the European Union (EU) for the most significant advancement in the Summary Innovation Index.

The innovative business, and, in particular, the high-tech sector, is the axis of innovation-driven economic growth. It attracts and mobilizes the necessary resources for the development of innovation. Sufficient volume of innovation-active business and an ability to create or attract new

knowledge and technologies, investments in science, technology, innovation (STI), and high- quality research and development (R&D) determine the national innovation level. Moreover, digitization and international relations create preconditions for development and progress.

Another factor driving the open innovation in Lithuania is Start-ups. More and more Lithuanian start-ups are innovating. Start-ups operating in Lithuania have been growing steadily and making the whole system grow. The fact that we are witnessing growth even during these tense times—the ongoing pandemic and the war that has broken out—shows that the whole community is sustainable. According to the review data from Dealroom, when assessing data from 2017 to 2022, Lithuania is the second-fastest growing startup ecosystem in Central and Eastern Europe. Throughout 2017–2022 the number of start-ups grew by approximately 19 %, and about 1200 start-ups had their headquarters in Lithuania at the end of 2022. The aim is to have an ecosystem of 2 thousand start-ups operating in Lithuania employing 30 thousand people and bringing EUR 375 million into the state budget in taxes annually by 2025.

### 3. Preliminary study of Key Performance Areas

#### 3.1. Methodology and stages of analysis

The study and analysis of the innovation trends we set up for the identification of KPAs foresees several steps as shown in the figure below (Figure 1): 1) Analysis on desk; 2) analysis of the scenario with the main stakeholders, through surveys and interviews. 3) In parallel the study concerned the collection of corporate needs. Again, the instruments used were questionnaires, interviews and targeted meetings.

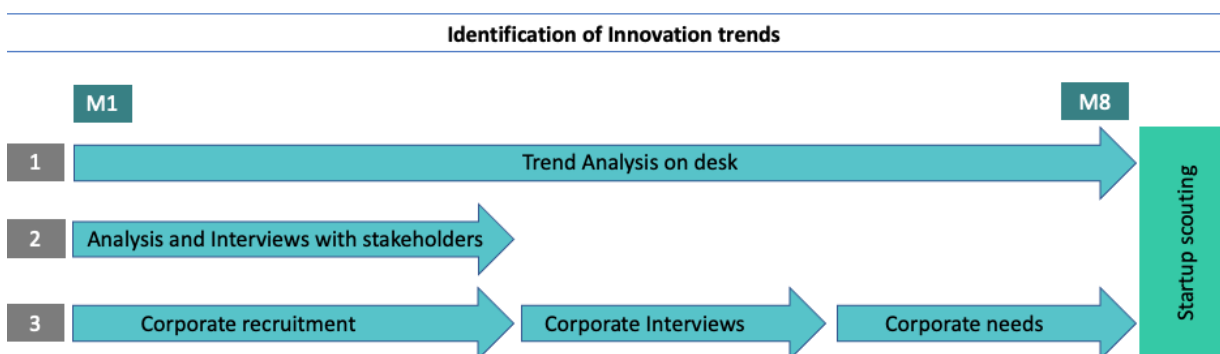


Figure 1 – Methodology for the Identification of Innovation trends

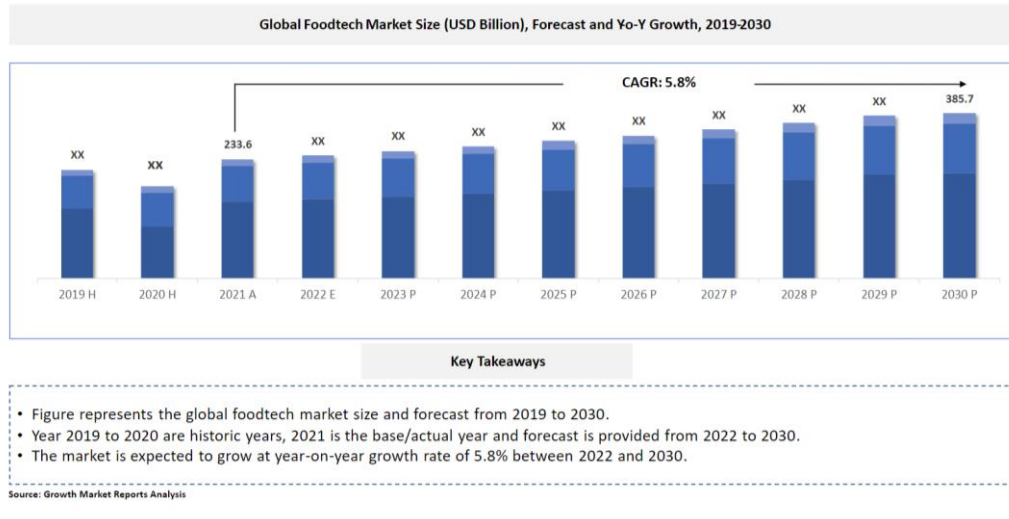
#### 3.1.1 Global trend of Innovation: analysis on desk

The analysis on desk is focused on the exploration of the innovation scenarios in order to investigate short and long-term impacts and identify opportunities for both corporate and innovative SMEs and start-ups in the following areas: **food, healthcare, digital and fintech.**

#### FOOD SECTOR

The global food-tech market size was valued at USD 233.6 Billion in 2021 and is expected to surpass USD 385.7 Billion by 2030, expanding at a CAGR of 5.8% during the forecast period, 2022–2030. The growth of the market is attributed to the rapid growth of online food delivery services and rising number of consumers preferring online buying for healthier food products.<sup>4</sup>

<sup>4</sup> Source: Growth Market Reports - Foodtech Market by Technology Types (Mobile App and Websites), Service Types (Online Grocery Delivery, OTT & Convenience Services, Online Food Delivery, and Others), Product Types (Dairy, Fruits & Vegetables, Meat, and Others), and Regions (Asia Pacific, North America, Latin America, Europe, and Middle East & Africa) - Global Industry Analysis, Growth, Share, Size, Trends, and Forecast 2022 – 2030



Foodtech or food technology refers to the use of advanced technology for food processing and packaging to maintain quality foods and distribute them to consumers. The advancement in food technology market helps in the rapid growth of e-commerce food services, which results in the massive expansion of the consumer base for several food chain restaurants.

Consumers also easily connect with food service providers through mobile apps or websites on their smart devices and order their favourite food items. Thus, food tech offers several benefits such as saving time and high convenience for ordering foods at consumers' fingertips.

Rapid transformation in the online food delivery systems such as increasing consumers' preference for buying grocery, meat, and vegetables online is made possible due to the wide development of mobile banking services and other online payment facilities. The pandemic had drastically transformed the overall consumer behaviour and their lifestyle, which resulted in the rapid growth of online retail platforms worldwide. As a result of the prolonged closure of brick & mortar stores and movement restrictions imposed by the emergency lockdown of governments, consumers preferred online shopping and chose online delivery services to avoid the risk of virus spread.

### *Market Trends, Drivers, Restraints, and Opportunities*

- High demand for food products due to rising numbers of the global population and increasing disposable income of a large portion of the population are key factors driving the market.
- Rising number of the health-conscious population push to increase the demand for healthier foods. Strict government policies regarding safety and quality food regulation compliance are likely to propel the market during the forecast period.
- Rapid growth of the e-commerce distribution channels delivering consumers' demands at the doorstep at affordable prices presents a key driver of the market.
- Increasing use of smart devices such as smartphones and laptops along with the high penetration of the Internet especially in developing economies further fuels the market.
- Issues concerning packaged food quality and lack of brand designs among startups act as major hurdles that can hamper the market growth in the coming years.
- Increasing participation of food-tech startups in the global market, especially in developing regions is expected to offer immense opportunities for market expansion.

## Food Market Segment Insights

### *Availability of several food delivery websites drives the websites segment*

Based on technology types, the global foodtech market is bifurcated into mobile apps and websites. The websites segment held more than 47% of the market revenue share in 2021 and is expected to expand at a rapid pace during the forecast period owing to the rapid growth of several food delivery websites and increasing food orders through individual websites. On the other hand, the mobile app segment is a fast-growing domain and is anticipated to hold a key share of the market in the coming years owing to rising use of mobile apps for food orders and high penetration of the Internet on smartphones.

### *Fast-delivery and discounted price offers fuel the online grocery delivery segment*

In terms of service types, the market is segmented into online grocery delivery, OTT & convenience services, online food delivery, and others. The online grocery delivery segment accounted for a large market share in 2021 and is projected to register a CAGR of 6.5% during the forecast period owing to the rapid introduction of grocery delivery online platforms, offering fast-delivery services. Moreover, heavy discount offers for grocery products by online retailers present another key driver of the segment.

### *Meat segment dominates the market*

On the basis of product types, the global food-tech market is segregated into dairy, fruits & vegetables, meat, and others. The meat segment was worth over USD 76.3 billion in 2021 and is projected to register a considerable CAGR during the forecast period due to rising meat consumption and increasing demand for processed meat products. The rapid expansion of meat delivery online platforms and offering healthy meat products to consumers present another key factor boosting the segment.

Food systems face a number of severe and persistent interlinked challenges. These include environmental problems such as resource scarcity, excessive pesticide and herbicide use – contributing to biodiversity loss, pollution and decreased soil quality – and excessive greenhouse gas emissions<sup>5</sup>.

Furthermore, consumption patterns lead to malnutrition, which carries the triple burden of undernourishment, overweight and micronutrient deficiency – factors which coexist within countries and to some extent in individuals.

These challenges point to the urgent need to transform the world's food systems in order to stay within planetary boundaries. However, tackling these interlinked challenges is difficult as it is increasingly recognised that food systems can best be understood as complex adaptive systems. This complexity means that food systems are multi-actor, multilevel and multifunctional systems that exhibit non-linear dynamics, such as trade-offs, synergies and systemic feedback loops.

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<sup>5</sup> Source: EU Publications - *Research & Innovation for Accelerating Food System Transformation Operationalising FOOD 2030 through Living Labs*



Governing the transformation of complex systems is challenging as it involves managing uncertainties, systemic trade-offs, cross-sectoral interactions, power dynamics and conflicting perspectives. Research and innovation could serve as a catalyst for food system transformation: R&I should be inter-sectoral, multi-stakeholder, multifactorial, interdisciplinary and transdisciplinary.

The framework integrates R&I into four key food and nutrition security priorities: (1) nutrition for sustainable healthy diets, (2) climate-smart and environmentally sustainable food systems, (3) circular and resource-efficient food systems and (4) innovation and empowerment of communities.

### ***Food 2030 Pathways for Action***

The transition to sustainable food systems, which is at the heart of the EU Green Deal and the UN sustainable development goals, engages all actors from farm to fork, including food processors.

Food processing serves many objectives. It makes it possible to change flavour, texture, aroma, colour or form, or to increase convenience by reducing preparation times and by making food portable. It prolongs the shelf life of food and ensures food safety (e.g. destruction of food-borne pathogens or natural toxins). It offers strategies to adjust the levels of specific nutrients in food (e.g. through fortification), to increase bioavailability of nutrients (e.g. through encapsulation) and to add enhanced functionalities (e.g. for better health). Advances in food sciences and technologies have aimed to maximise these benefits while minimising possible unfavourable effects on the quality and safety of foods and on nutritional health.

The socio economic contributions of the food-processing sector in the European Union are significant. The sector buys nearly 70% of the EU's agricultural raw materials and its companies – of which 99% are small and medium sized enterprises (SMEs) – employ almost 4.8 million people in the EU. As a whole, this sector generates 1.9% of EU gross value added. Its products are exported worldwide and are well known for their quality and safety.

Nonetheless, like other parts of our food systems, processors are being called upon to radically increase the environmental, social and economic sustainability of our foods and diets. Processors need to significantly improve resource efficiency, increase transparency, provide healthier diets and improve consumer trust against the background of climate change, digitalisation and an increase in population. Although the reduction of water, energy and food waste have already become key missions for food-processing companies, more needs to be done.

### **FOOD 2030 PRIORITIES**

#### *Nutrition and health*

- Increased insights into how food and food processing affect the health of individuals.
- Strategies to improve the delivery, digestibility and bioavailability of food elements (e.g. bioactives) and to reduce non-communicable, nutrition-related diseases.
- New approaches to adapt food supply to the needs of specific vulnerable groups (e.g. an ageing population).
- Improvements in food safety and security assessment to increase responsiveness to crises.

### Climate and sustainability

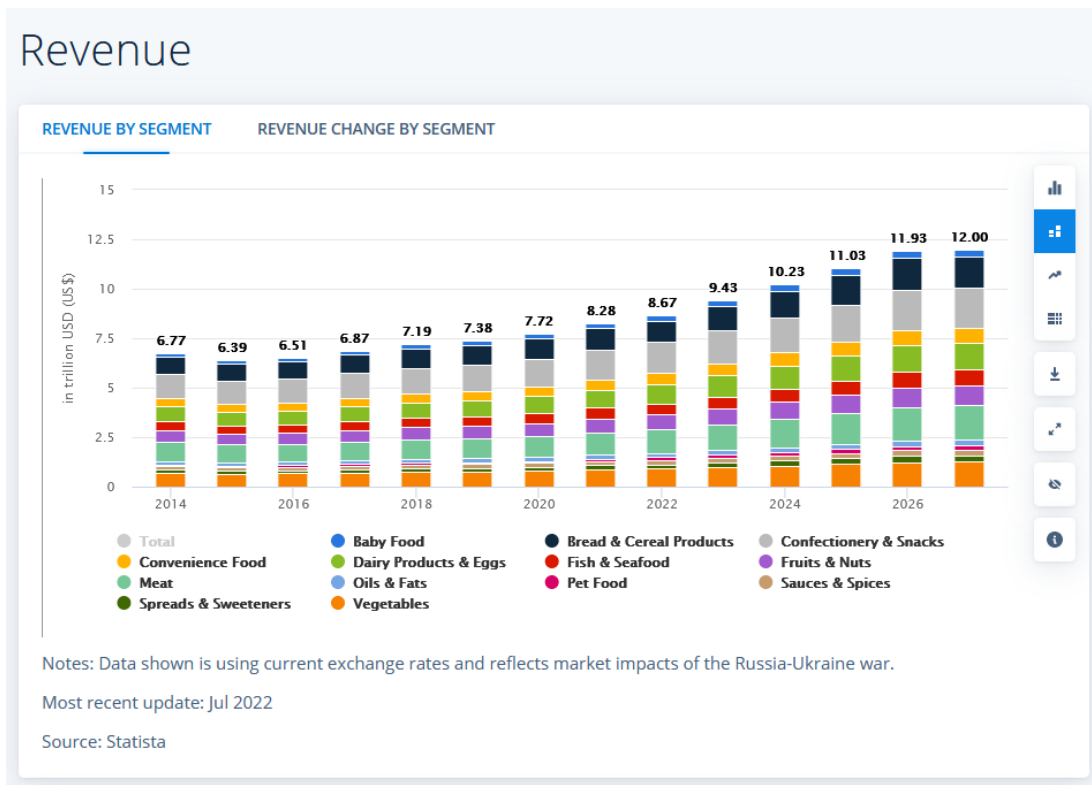
- Optimising the integration into processes, products and diets of new sustainable food sources (e.g. alternative proteins) that contribute to the reduction of greenhouse gas emissions.
- Improved data capture and data management related to the sustainability of food processing.

### Circularity and resource efficiency

- Approaches towards minimal processing including new non-thermal technologies (e.g. pulse electric field, high pressure) to reduce energy and water use in processing and new active and smart packaging to prevent or reduce food waste.
- Strategies to reuse and valorise food waste.

### Innovation and communities

- New approaches to engage consumers in the shaping of their food and to increase trust.
- Strategies to increase the capacity of SMEs in the food-processing industry to take part in innovation and digitalisation in food systems.
- New models for food production and distribution

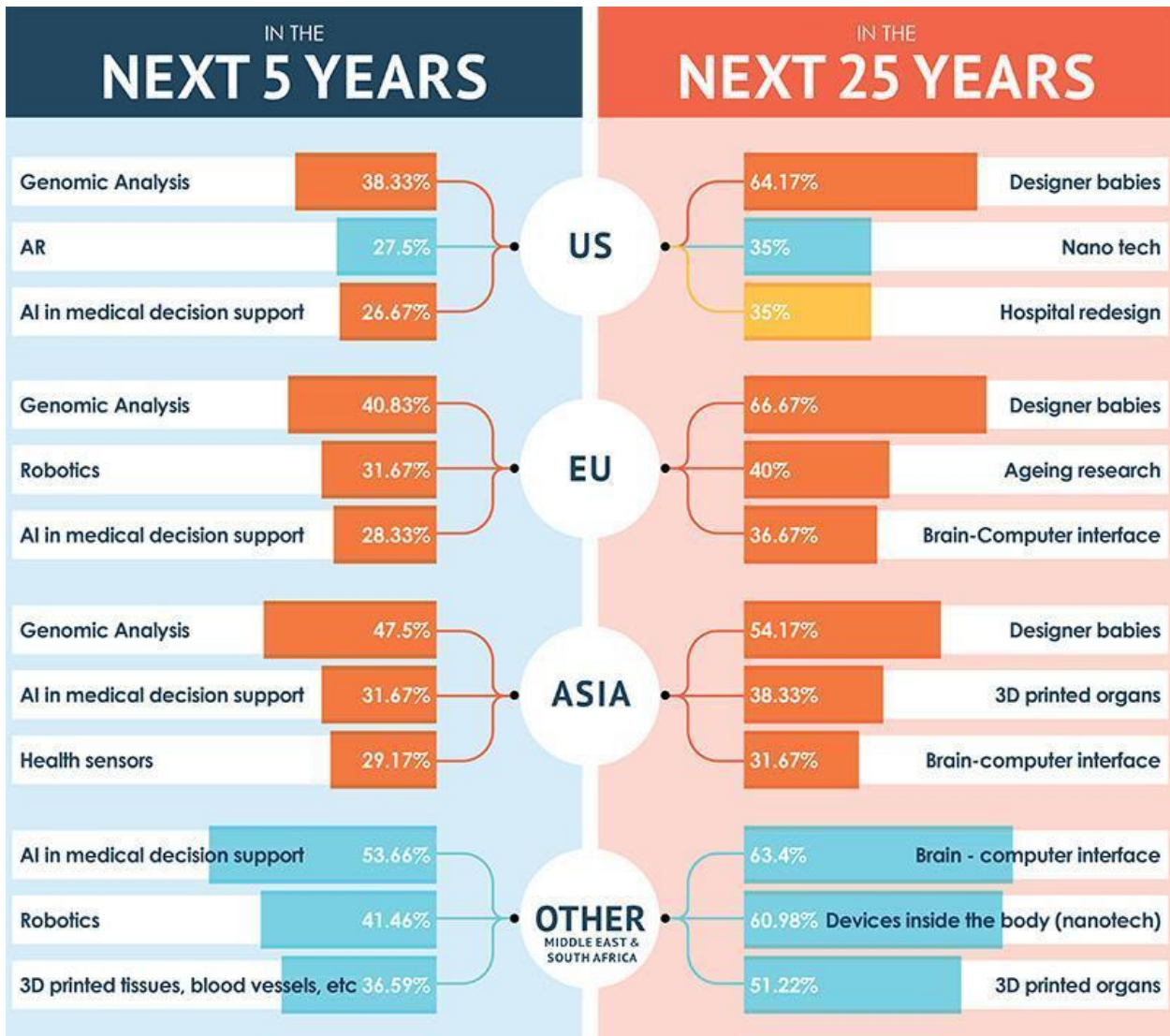


Revenue in the Food market amounts to US\$9.43tn in 2023. The market is expected to grow annually by 6.21% (CAGR 2023-2027).<sup>6</sup>

<sup>6</sup> Source: Statista *Food – Worldwide*

## HEALTHCARE SECTOR

Like many other sectors, healthcare is about to enter a period of rapid change. Longevity and the advance of new technologies and discoveries – as well as innovative combinations of existing ones – are among the many factors propelling patient empowerment, which is fundamentally changing how we prevent, diagnose and cure diseases.<sup>7</sup>



Innovative trends in Healthcare sector<sup>8</sup>

In the next 12 years, the healthcare industry will face major demographic changes that will dramatically impact which services are needed and how they are delivered. The long-discussed movement of the Baby Boom Generation into the ranks of the retired will continue to occur, while

<sup>7</sup> Source: The Economist - The future of healthcare

<sup>8</sup> Source: KPMG - Healthcare 2030

millennials and other younger patient cohorts will exert more and more influence over healthcare delivery models.

Concurrent with these population changes are market factors that will also have a significant impact. There is a growing trend toward seeking medical treatment outside of the hospital at lower-cost, more convenient sites of care.

The concept of “value” is now being defined and assessed by consumers. And, there are a number of high-profile technology disruptors poised to enter the healthcare arena in areas with significant consumer impact.

## **Consumer**

As millennials, Generation X, and baby boomers enter new life stages at the same time, there are simultaneous demands for both lower cost, convenient care delivery and better management of chronic illness and outcomes. The industry must evolve to meet the needs of these groups both in terms of where they converge and where they deviate.

**The young.** In general, millennials are resisting engagement with the healthcare system, as is typical of adults in their 20s and early 30s. In fact, 54% say they have postponed care due to cost, and 45% of those between ages 18 and 29 do not currently have a primary care physician.

It is critical to remember, however, that the young won’t always be young. They may stay healthy longer than previous generations—due to healthier eating habits, less smoking and the wealth of technology tools available to them, but only if the healthcare industry engages with them to encourage health-sustaining behaviours.

The opportunity is there: Millennials in particular have shown that they are open to wellness programs, with 45% already using technology to measure fitness and health, and 45% turning to social media for research on provider ratings and relative costs.

**The aging.** It is likely that many individuals currently entering retirement will live longer than earlier generations. However, they will also live sicker, increasing the need for complex care. Many of them will suffer from one or more chronic conditions, including diabetes, heart disease, cancer, hypertension, high cholesterol, arthritis and anxiety, among others.

It will be challenging, but imperative, to create a system that balances the needs of these very different demographics.

## **Economy**

Today, Americans with five or more chronic conditions make up 12 percent of the adult population but account for 41 percent of total healthcare spending.<sup>15</sup> Among individuals with six or more chronic conditions, 70 percent have been taken to the emergency room, 33 percent have been hospitalised, and 50 percent have utilised post-acute care. The cost of caring for the sickest patients (6+ conditions) is twice as much on average as caring for those with (only) three or four conditions, with the majority of additional spending going to office visits, inpatient care and prescription drugs.

Of course, lowering costs over time is dependent on early intervention and prevention measures. It is worth noting that there are some successful prevention-oriented models today that help lower costs and, arguably, should be expanded and brought into other conditions. In addition to prevention measures, more attention must be paid to whether spending on particular tests and procedures is necessary. Further, poor access to primary care for a large portion of the population contributes to inadequate chronic disease management, adherence issues, and overuse of drugs and testing.

## **Preference**

In addition to age-based clinical needs, it is also important to evaluate access preferences, to elevate the patient experience regardless of age. In doing so, it may be helpful to look at two categories of healthcare consumers: the Wellness Focused and the Daily Health Managers.

The Wellness Focused are a group of consumers who may not have PCPs but still see the value of preventing future illness through wellness-oriented programs. Although they will most likely be open to healthy eating and exercise programs offered by their health plans, there are opportunities for health systems to engage with them as well. In general, health systems have shied away from building consumer credibility in relevant ways. Going forward, they should start building out new capabilities to position themselves as sources of wellness, rather than as problem solvers.

When they are sick, younger members of this group are likely to use retail clinics versus visiting a PCP. In a recent study, 30 percent of millennials reported having used a walk-in clinic in the last year, versus only 14 percent of baby boomers. Further, when it comes to telemedicine adoption, which can allow patients to receive treatment for increasingly complex conditions without having to travel to a doctor's office, millennials are outpacing baby boomers at 40 percent to 19 percent, respectively.

Although it is increasingly likely that health systems will lose some wellness-oriented patients to retail clinics and virtual providers when it comes to routine care, the industry should be focused on forging partnerships so that referrals can be made to the health system if higher acuity care becomes necessary.

Further, since this group of consumers will likely develop health challenges as they age, health systems should partner with these lower-cost providers of care on data collection and predictive analytics to evaluate the likelihood that an individual will develop a disease, as well as stratify patients according to geographic and demographic risk pools.

The Daily Health Managers may have challenges with early indicators of chronic illness, e.g., excess weight, elevated cholesterol, mild hypertension and prediabetes. Or they may already suffer with one or more chronic illnesses that require ongoing symptom and complication management. These individuals require coordinated treatment across inpatient and outpatient care settings, as well as on-demand communication with extended care teams that comprise both medical specialties and primary care. This will require online tools and mobile apps that drive behavior modification and allow real-time communication and data sharing with providers.

As they age, this group is increasingly expressing interest in receiving care in the home, rather than in long-term nursing facilities, hospitals and hospice.

Called “home-based primary care” or “hospital-at-home,”<sup>29</sup> this model will require, among other things, a concerted effort to foster patient acceptance of telemedicine modalities; further, health systems need to collaborate with health plans to create value-based reimbursement models that acknowledge the progression of treatment from inpatient care to telemedicine and home care, and that reward providers for helping patients avoid complications and/or slow disease progression.

The patient experience preferences of the Wellness Focused and the Daily Health Managers are very different at present. However, over time, the two groups will find points of convergence. If the present disconnect between sites that offer wellness programs and those that offer illness management continues, there will be a lack of care continuity throughout the patient lifespan.

### **What we have to do in the Health sector**

To be fair, consumerism in healthcare is complicated, given the emotional charge of illness and the complexity of the delivery system. At present, healthcare organizations are not well-versed in consumer needs and preferences. This challenge is heightened by the fact that consumers often make decisions through difficult-to-decipher behavioural motivations, which change as they move through various life stages or face chronic illness.

To truly understand consumer behaviour, there must be a free flow of consumer data, regardless of care setting. Consumers are largely on board: a number of recent studies indicate that individuals are more than willing to share their medical data if it leads to the most appropriate care in the most appropriate settings, as well as improved customer experiences and better outcomes. Availability, mobility and interoperability of clinical data help create the empowered customers that are so critical to a consumer-focused healthcare industry.

For their part, health systems need to start understanding and relating to individuals as people rather than as patients. This requires reframing how customers are approached, i.e., with a detailed understanding of not only their health information, but also who they are and what they want. Across all consumer industries, there have been shifts in how customers are categorized and segmented, with an overall trend toward more granular understanding of what they care about, how they behave and the factors that motivate them to change.

In a consumer-centric healthcare system, the focus on customer experience should be underpinned by an equal commitment to improving clinical outcomes. Health systems must make more significant investments in advanced technologies that can impact outcomes - e.g., genetics tools, risk stratification calculators, rare disease detection algorithms, machine learning, natural language processing and predictive analytics. Such investments are critical to caring for patients with early warning signs of chronic illness, as well as the shift to a healthcare paradigm less focused on treating illness than on prevention and cure.

Further, care management solutions can be used in the clinical setting to ensure that patients move through the healthcare enterprise safely and with appropriate care; enable two-way communication between patients and providers to better manage chronic conditions; and provide accurate measurement of care team performance so that all procedures, tests and treatments are warranted and not duplicative. Further along the spectrum will be technologies like artificial intelligence (AI),

which is expected to be used in 90 percent of U.S. hospitals by 2025 to allow rapid diagnosis of chronic conditions like cancer and diabetes.

Finally, as consumers adopt data-driven transparency tools, we believe the industry will have to react more comprehensively to their expectations related to cost, quality and convenience. Armed with ready access to data on true costs, outcomes and peer satisfaction on par with the data available for most goods and services they purchase today, consumers will be truly empowered. In fact, the availability of such information in healthcare has already begun; as broader availability and adoption continue, healthcare consumers' expectations will increase exponentially.

**Virtual Care.** Services that transcend geography like telemedicine and other forms of virtual care are critical to the layered approach. Used strategically, these technologies allow providers to meet the needs of remote or homebound patients from one centralised hub and provide guidance to physicians in other locations who may be struggling with complicated cases. This model aligns with the concept that a consumer-centric healthcare system should meet the needs of all consumers, regardless of geography, mobility or economic status.

Perhaps most critically, telemedicine can be used to preserve the lifetime value of the customer. Right now, healthcare is local, fragmented. If patients relocate for job changes or retirement, their relationships with local healthcare providers will likely end. Instead, healthcare organisations should develop virtual care capabilities to meet patients where they are with a diverse set of services and then evolve those offerings over time according to changing patient needs.

**Critical Care in the Home.** Increasingly, providing hospital-level care in the home will also be an integral part of a layered approach. Recent studies show that patients who receive high acuity care in the home have been more satisfied with their experience and realise equal or better outcomes than comparable inpatients, not to mention 19 percent lower costs. Other studies have shown that, over time, a number of critical care procedures currently performed in hospitals – such as treatment for pneumonia, skin infections or even post-surgery recuperation -- could be provided for 30 to 50 percent less in the home, according to research from the Johns Hopkins University School of Medicine.

In summary, this layered approach to healthcare delivery requires reciprocal relationships between health systems, retail clinics, telemedicine providers and home care providers, and, by extension, same-day surgery centers, rehabilitation centers, free-standing emergency rooms and micro-hospitals. Specifically, retail care may involve some aspects of virtual care that patients can access on site. By the same token, care in the home will likely rely on virtual technologies when it comes to monitoring of post-surgery patients and the chronically ill. Finally, providers that utilize virtual care must work closely with health systems and specialty physicians to ensure that there is two-way communication if patients should require higher-acuity care than they can provide.

In support of the layered care paradigm, several recent studies have shown that timely and convenient access to healthcare is rising in importance in consumers' decision-making processes. Currently, despite the fact that most consumers prefer to book appointments by phone, only about 40 percent are successful on the first try, according to recent studies. And when it comes to younger generations, 58 percent of millennials and 64 percent of Gen Xers value online booking to the extent that they would switch providers in order to do so. Therefore, as we look to a consumer-focused

future, more sophisticated and integrated forms of appointment scheduling are imperative. It is important to recognize that convenience doesn't only refer to streamlining the scheduling process in traditional care settings. More and more, it means delivering a cohesive experience across all points of access. However, access won't only be facilitated by big-name companies and platforms. There are a wide variety of innovative startups making a real impact in healthcare already, with many more on the horizon.

In the end, no matter which digital platforms and tools health systems adopt to further consumer-focused care, the technologies must be integrated seamlessly with the ongoing physical delivery of healthcare. In this way, healthcare consumers will associate outstanding digital experiences not just with technology providers but with the health system itself.

Digital transformation of health care can be disruptive; however, technologies such as the Internet of things, virtual care, remote monitoring, artificial intelligence, big data analytics, blockchain, smart wearables, platforms, tools enabling data exchange and storage and tools enabling remote data capture and the exchange of data and sharing of relevant information across the health ecosystem creating a continuum of care have proven potential to enhance health outcomes by improving medical diagnosis, data-based treatment decisions, digital therapeutics, clinical trials, self-management of care and person-centred care as well as creating more evidence-based knowledge, skills and competence for professionals to support health care.<sup>9</sup>

## DIGITAL SECTOR

Technology continues to be a primary catalyst for change in the world. Technological advances offer companies, governments and social institutions greater opportunities to increase productivity, invent and reinvent offerings and contribute to the well-being of humanity. While it remains difficult to predict how technology trends will develop, executives can better plan the development of new technologies by anticipating how companies might use them and understanding the factors that influence innovation and adoption.

The world is going from one global catastrophe to another. But, as has been the case for millennia, people adapt to instability through four responses: attack, flight, focus and immobility.

*Attack: people will react more and more firmly against injustice*

*Escape: people will seek alternative solutions*

*Focus: people will concentrate on what they can control*

*Immobility: people will choose not to act*

Consider the current pressure on people's finances: families trying to make ends meet cut non-essential expenses, such as media and subscription services, resulting in a phenomenon called 'Great Cancellation'. People cancel gym memberships, suspend pension contributions and drop health and life insurance policies. Rising prices can also exacerbate loneliness, as one of the first expenses they give up is for social activities.

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<sup>9</sup> Source: World Health Organization - Global strategy on digital health 2020-2025



In the past, artificial intelligence was mostly used by companies and brands as a service to people. Today, thanks to neural networks, AI is available to everyone to unleash creativity and generate text, images and music. Innovations are reaching the market at an astonishing speed.

With regard to language processing, neural networks are used to generate text sentence structures based on a language model with 175 billion parameters. These technologies are sophisticated enough to generate texts for blogs, e-mails and articles (although these are materials that require human editing).

For sound, Jukebox is a neural network that generates music and voice in a variety of genres and artistic styles. For images, Midjourney is a closed-source deep learning model for creating images from text or other images. Companies need to think about how to make a difference in the sea of AI-generated content. How can AI be used to speed up and make innovation more original?

The use of personal data requires a profound rethink. Transparency and trust in online experiences offered by brands are rapidly decreasing. 86% of people are increasingly concerned about the privacy of their data.<sup>10</sup>

But control of data may soon return to users. Digital wallets containing tokens (representing payment methods, identity documents, loyalty cards and more) will allow people to decide how much data to share with companies, and even sell it to them. This is great news for brands: data voluntarily given up by people will be even more valuable in a 'cookie-free' world than information collected by third parties.

Increasing consumer trust in digital wallets could be a challenge. Although it is still early days, companies can accelerate the adoption of these tools with the following actions:

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1. Demonstrate to people that controlling data is worth the time investment
  2. Making tokens easy to obtain and use in everyday transactions
  3. Helping people understand the function of a wallet beyond payments
  4. Understand the levels of authorisation people can grant companies
- 

Dark patterns, which are design tactics that persuade or heavily influence people to make certain choices, have been tricking internet users into giving up their data, money, and time. Third-party cookies follow people around the web for retargeting purposes, helping brands lure them back to their sites to make a purchase. Ad networks have stored incredible amounts of user data, and may have access to sensitive detail such as medical history, sexual orientation, and political affiliation. The problem is that, in some cases, this information is linked to people's real names—and it's unclear how extensively this is happening.

In addition to privacy concerns, the friction in people's internet experience has been increasing. Cookie preference pop-ups are just as much of a nuisance as pop-up ads, and for every new site or service provider, people are required to onboard data all over again. Today, they're forced

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<sup>10</sup> G2 software marketplace

to remember, on average, over 100 usernames and passwords—each of which should be unique and/or follow a specific set of rules around upper and lower case, numbers and special characters. The experience is wildly fragmented and anxiety-provoking as they must manage brands' attempts to collect information about them and enter a set of personal details multiple times a day.

As of 2021, some 83% of marketers still relied on third-party cookies as part of their marketing strategy.<sup>91</sup> A G2 article from February 2022 states that 44% of marketers predicted they'd need to quintuple their spending from 5% to 25% to hit the same goals in 2022 as they did in 2021.

The rise of digital ownership, through blockchain technology, is shifting the power dynamic to users by putting them in control of their digital identity through non-transferable fungible tokens stored in digital wallets. What are tokens? When people check their coat at an event, they get a ticket in exchange, showing a unique number matching that on the coat hanger. The little slip of paper is a physical token that represents that coat and serves as proof of who owns it.

Digital identity, objects, and assets will increasingly be stored in a "wallet" online, built on the blockchain. Web3 wallets serve two major functions. The first is that wallets allow their owners to manage all owned digital assets, currencies, and tokens in one place. The second is that wallets are used for accessibility to other blockchain-based apps. People can authenticate themselves through their wallets, and it's pseudonymous. They're easy to use—at least in theory—and becoming more accessible.<sup>11</sup>

The coming changes in control and power dynamics will lead to new scenarios. The new power dynamics will offer companies incredible opportunities to develop new relationships with consumers. Engagement and loyalty are at a turning point and creativity is close to reaching unlimited possibilities. Are we ready for change?

Future trends and investments in relevant technologies are:<sup>12</sup>

### **Advanced connectivity**

5G/6G cellular, wireless low-power networks, low-Earth-orbit satellites, and other technologies support a host of digital solutions that can drive growth and productivity across industries.

### **Future of bioengineering**

Converging biological and information technologies improve health and human performance, transform food value chains, and create innovative products and services.

### **Future of clean energy**

Clean-energy solutions help drive toward net-zero greenhouse-gas emissions across the energy value chain, from power generation to power storage and distribution.

### **Future of sustainable consumption**

Sustainable consumption involves transforming industrial and individual consumption through technology to address environmental risks, including climate change.

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<sup>11</sup> Accenture report 2022

<sup>12</sup> McKinsey Technology Trends Outlook 2022

### **Web3**

Web3 includes platforms and applications that enable shifts toward a future, decentralised internet with open standards and protocols while protecting digital-ownership rights, providing users with greater ownership of their data and catalysing new business models.

### **Industrializing machine learning**

Industrialised machine learning (ML) uses software and hardware solutions to accelerate the development and deployment of ML and to support performance monitoring, stability, and ongoing improvement.

### **Immersive-reality technologies**

Immersive-reality technologies use sensing technologies and spatial computing to help users “see the world differently” through mixed or augmented reality or “see a different world” through virtual reality.

### **Cloud and edge computing**

Cloud and edge computing involves distributing computing workloads across remote data centers and local nodes to improve data sovereignty, autonomy, resource productivity, latency, and security.

### **Trust architectures and digital identity**

Digital-trust technologies enable organisations to build, scale, and maintain the trust of stakeholders in the use of their data and digital-enabled products and services.

### **Next-generation software development**

Next-generation tools aid in the development of software applications, improving processes and software quality; tools include AI-enabled development and testing and low-code or no-code platforms.

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## **FINTECH SECTOR<sup>13</sup>**

The fintech sector is evolving rapidly and often unpredictably. If the pandemic has accelerated the speed of this transformation, making the three-year period 2020-2022 particularly rich in developments and new technological solutions, 2023 is already looking like the year when these innovations will breathe new life into the financial world, enabling market players to strengthen business propositions, enrich customer experiences and increase revenues. To better understand what to expect, Qonto, a business finance management solution, examines some of the fintech trends and challenges to watch out for in 2023.

**Open banking.** Already in past years, the vast majority of international and Italian companies have believed in the potential of open banking, which in the current climate of economic uncertainty has proven to be an ideal solution for improving corporate liquidity and enhancing financial information. Indeed, PSD2, the second Payment Services Directive in the European Union that came into force in 2018, has already brought several key innovations to the fintech ecosystem, such as the legal right

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<sup>13</sup> BitMAT 2023

for consumers to access their payment accounts through third-party systems, increased payment security and a consequent reduction in bank fraud. However, while open banking has already proved to be a great opportunity, it has not yet unfolded its full potential and further developments are expected during 2023, as well as updates to the directive, and consequently further benefits for the fintech sector that the future PSD3 and new perspectives in open finance will bring.

**Electronic invoicing.** Electronic invoicing is already mandatory between public administrations and their suppliers (B2G) as of 2020 and is progressively expanding to B2B in many countries. Italy, on this front, has shown itself to be at the forefront of the European scenario: the electronic invoicing obligation, which progressively came into force for companies and professionals from 2019, also came into effect on 1 July 2022 for VAT holders under the flat-rate regime, with the sole exception for those with annual revenues and remuneration of less than EUR 25,000. But this clause will only remain valid until 2024. In 2023, therefore, the topic of e-invoicing will remain central not only in Italy, but on the European scene (e.g. in France), where important developments on the subject are expected.

A Qonto survey of more than a thousand Italian companies found that 79% of SMEs are ready to favour a banking service that also includes the issuing of electronic invoices. In particular, the idea of combining e-invoicing and payments appeals to younger companies, which are less than 10 years old (83%) and to the IT & Telecommunications sector. It is therefore expected that more and more companies will choose solutions that not only allow them to fulfil their tax obligations, but also allow them to benefit from all those functionalities that increase control over their business and better internal organisation.

**Soft POS.** **Soft POS**, i.e. applications capable of transforming smartphones and tablets into card payment acceptance terminals, represent the latest frontier in electronic payments, offering a completely software-based alternative to traditional payment terminals while maintaining a very high level of security. At the moment, the deployment of Soft POS solutions has encountered some limitations due to the fact that some cards are still not contactless enabled, it is expected that the Soft POS user base will grow by 475% globally by 2027. Numerous players, even outside the banking sector, are already launching their own Soft POS offerings (Apple, Shopify, Paypal), which opens up opportunities for the market to enrich the payment solutions landscape with new systems that are easy to use and install.

**Banking-as-a-service.** Banking-as-a-service has been increasingly and pervasively introduced in various sectors for some time now. It is essentially an end-to-end process that ensures the execution from start to finish of plug-in, modular, scalable and on-demand business services, thus enabling a more agile and effective user experience. The world of finance, and banking in particular, has not been left behind either, and the adoption of a banking-as-a-service model is expected to drive industry revenue growth of 240 per cent by 2027 (Source: Juniper Research, 2022). In the months to come, it will be necessary to go further and diversify digital channels so that services can be accessed more quickly outside traditional banking channels.

**Green banking.** Sustainability goals increasingly directly influence the strategic choices of companies, which is why the fintech sector is also playing an increasingly active and proactive role in managing ESG paths. Green banking is a growing market and it is estimated that 25 per cent of users would switch to banking institutions with higher ESG priorities. By their very nature, digital financial

institutions are well positioned to promote the development of sustainable finance, both because of their paperless processes and the absence of physical locations that lead to inevitable consumption. While fintechs continue to gain ground and market share, traditional banks have also begun to introduce green practices that are reshaping the market.

**Cashback.** With a substantial number of players already launching B2B cashback offers in the past year, fixed rewards programmes are also an accelerating trend for 2023. Although rewards in the form of cashback as a means to incentivise loyalty will become more common, it is equally foreseeable that, due to the high risks due to the economic environment, the emergence of new cashback services and opportunities will still remain in a testing phase for many companies.

**BNPL (Buy Now, Pay Later).** BNPL (Buy Now, Pay Later) will certainly continue to be a relevant trend in 2023, developing further with loan-related services. The market for BNPL solutions related to B2B transactions is now twice as large as that for marketplace purchases and typically B2C. The constant arrival of new players, the growing interest of venture capitalists and the current climate of financial uncertainty also increase the market potential, but at the same time the future of this business model is still uncertain due to rising interest rates (higher fees for merchants, increased risk of non-payment, etc.).

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### 3.1.2 Analysis of corporate's innovation trends and identification of their needs: strategies and activities

Following the study of the background and of the innovation scenarios in the sectors of Food, Health, Digital and Fintech, the EPICENTRE Partners focused on a multi-modal strategic approach to ensure corporate participation in order to identify their innovation needs and the trends of innovation in which they are open to explore potential solutions.

#### **The strategy adopted consists of several approaches:**

- 1) Firstly, we have prepared a list of corporate to be contacted according to our previous collaborations.
- 2) In parallel, we used several communication channels in order to increase the number of potential participants
- 3) We have prepared a call for Expression Of Interest for the participation of the corporate to the project Epicentre
- 4) We also prepared a first draft of survey/questionnaire to be submitted to the corporate that answered to the EoI, and to be used as inspiration for interviews
- 5) We participated in several events (on line and in attendance) in order to launch the opening of the phase for the submission of expressions of interest.
- 6) Following this phase we start a period of tailored B2B meetings and interviews for the presentation of the project, individually or to a wide audience, in order to receive more applications to the Open Call for Corporates.
- 7) In order to broaden the participation of companies and obtain support in identifying innovation trends and refine and customise the questionnaires according to the needs of the project, CBIOS also involved SMAU as experts in the field of open innovation, that is a company whose aim is to organise national and international events to promote open innovation and interaction between the world of corporate and start-ups. This collaboration allowed us to reach a large number of companies and also to receive extensive feedback in terms of EoIs,

interviews and surveys. For this procedure, CBIOS also received the support of an in-house consultant, an expert in life sciences communication, who carried out all the interviews and assisted us in merging and synthesising all the results of the previous phases.

- 8) In the last phase, a document was produced that merged all the results from the Eols, questionnaires and interviews. This document is strategic for the identification of KPAs and the definition of challenges to be included in the Open Call for innovative SMEs and STARTUPS.

## 1) Preliminary list of Corporate

First of all we identified potential participants among our clusters or previous collaborations

LIST OF CORPORATES - CLDI					
N.	Corporate name	Country	Sector	Cluster member	Previous collaboration
1	Estrella Damm	spain	Agri-food	No	yes
2	Casa Tarradellas	spain	Agri-food	No	
3	Granja Armengol	spain	Agri-food	No	
4	Nestle	spain	Agri-food	No	
5	Friman	spain	Agri-food	No	yes
6	Bimbo	spain	Agri-food	No	
7	Nutrition & Santé	spain	Agri-food	No	
8	Danone	spain	Agri-food	No	
9	GB Foods (Gallina Blanca)	spain	Agri-food	No	
10	Ametller Origen	spain	Agri-food	No	
11	Serhs Food	spain	Agri-food	No	
12	JDE Coffee	spain	Agri-food	No	
13	Europastry	spain	Agri-food	No	
14	Frit Ravich	spain	Agri-food	No	
15	Pastoret	spain	Agri-food	No	
16	Zyrcular Foods	spain	Agri-food	No	
17	Bidfood Guzmán	spain	Agri-food	No	
18	Idilia Foods	spain	Agri-food	No	
19	Veritas	spain	Agri-food	No	
20	Heura	spain	Agri-food	No	
21	Tupinamba	spain	Agri-food	No	
22	Grupo ICA	spain	ICT/Digital Health	yes	yes
23	COSTAISA	spain	ICT/Digital Health	yes	yes
24	AETECH	spain	ICT/Digital Health	yes	yes
25	PLAIN CONCEPTS	spain	ICT/Digital Health	yes	yes
26	SERHS	spain	ICT/Digital Health	yes	yes
27	BEHIT	spain	ICT/Digital Health	yes	yes
28	GRUPO AIA	spain	ICT/Digital Health	yes	yes
29	PLAIN CONCEPTS	spain	ICT/Digital Health	yes	yes

<b>LIST OF CORPORATES - CBIOS</b>					
<b>N.</b>	<b>Corporate name</b>	<b>Country</b>	<b>Sector</b>	<b>Cluster member</b>	<b>Previous collaboration</b>
1	Dompé	Italy	ICT/Digital Health	Yes	Yes
2	Merck Serono	Italy	Health	No	Yes
3	Novartis	Italy	Health	No	Yes
4	SCAI	Italy	ICT/Digital Health		
5	Esaote	Italy	ICT/Digital Health	Yes	Yes
6	Engineering	Italy	ICT/Digital Health	Yes	Yes
7	Healthware	Italy	ICT/Digital Health	Yes	Yes
8	La Doria	Italy	Agri-food	Yes	Yes
9	Mate consulting	Italy	ICT/Digital Health	Yes	Yes
10	IBSA	Italy	Health	Yes	Yes
11	La Fiammante	Italy	Agri-food	Yes	Yes
12	Feger	Italy	Agri-food	Yes	Yes
13	GVS Sud	Italy	Health	Yes	Yes
14	Mataluni	Italy	Agri-food	Yes	Yes
15	Informatica Medica	Italy	ICT/Digital Health	Yes	Yes
16	Neuromed	Italy	Health	Yes	Yes
17	Bracco	Italy	Health	No	Yes
18	Damor	Italy	Health	Yes	Yes
19	Sella Corporate & Investment Banking	Italy	Fintech	Yes	Yes
20	Barilla SPA	Italy	Agri-food	No	No
21	Parmalat Group	Italy	Agri-food	No	No
22	UnipolSai	Italy	Fintech	No	No
23	I3P	Italy		No	No
24	Amadori Group	Italy	Agri-food	No	No



<b>LIST OF CORPORATES - LITMEA</b>					
<b>N.</b>	<b>Corporate name</b>	<b>Country</b>	<b>Sector</b>	<b>Cluster member</b>	<b>Previous collaboration</b>
1	Vikonda group	Lithuania	Food		Yes
2	Birštono mineraliniai vandenys	Lithuania	Food	No	Yes
3	Biržų duona	Lithuania	Food	No	Yes
4	Acorus calamus	Lithuania	Food		
5	Rūta	Lithuania	Food	No	Yes
6	Kauno grūdai group	Lithuania	Food	No	Yes
7	Vytautas Magnus University	Lithuania	University	No	Yes
8	Innovation agency	Lithuania	Public entity	No	Yes
9	Litek cluster	Lithuania	Digital	No	Yes
10	FETEK cluster	Lithuania	Digital	No	Yes
11	ART21	Lithuania	Food	No	Yes
12	Dojus Agro	Lithuania	Food	No	Yes
13	Agrokoncernas	Lithuania	Food	No	Yes
14	Baltic Amadeus	Lithuania	Digital	No	Yes
15	Xpliciti	Lithuania	Digital	No	Yes
16	Ewa Baltija	Lithuania	Food	No	Yes
17	BOD group	Lithuania	Digital	No	Yes

## 2) The launch of the Expression of Interest

In a second step we adopted several communication strategies to involve a wide number of corporate.

Communication activities and newsletter for the launch of the open call for the Expression of Interest:



DISTRETTO CAMPANIA BIOSCIENZE  
AL VIA IL PROGETTO EUROPEO EPICENTRE



Il Distretto Campania Bioscience è tra i partner del progetto europeo Epicentre, nato con l'obiettivo di realizzare nuove catene del valore inter-settoriali attraverso la creazione di un ecosistema tridimensionale PIC - Cluster - Imprese finalizzato a valorizzare il potenziale innovativo delle PMI, le capacità di networking dei cluster e quelle di scaling up delle imprese.

Con un chiaro impatto economico, Epicentre fornirà un sostegno finanziario di 1,05 milioni di euro alle PMI coinvolte nel progetto per stimolare la transizione green e digitale in Europa nei settori: digital, fintech, health e agri-food.

Il Distretto lavorerà al fianco della Asociación Cluster Digital De Catalunya e Lietuvos Nesto Bazarūnaijs Asociacija.

PRAGA, 25-27 SETTEMBRE  
EUROPEAN CLUSTER CONFERENCE 2022



Del 25 al 27 settembre, il Distretto Campania Bioscience parteciperà all'ottava edizione della Conferenza europea dei Cluster, promossa dalla Commissione europea, in collaborazione con il Ministero capo dell'Industria e del Commercio, sotto la presidenza onora del Consiglio dell'UE. Organizzato con il supporto della European Cluster Collaboration Platform (ECCP), l'evento riunisce esperti politici dei cluster, manager dei cluster, professionisti e altre parti interessate. Il 25 settembre mattina si terrà un evento di matchmaking.

[Full CBIOS newsletter](#)



INNOVATION VILLAGE - VIRTUAL BROKERAGE EVENT 2022  
PROGETTO EPICENTRE: DOMANI PRESENTAZIONE DELL'INIZIATIVA  
NELL'AMBITO DELLA GIORNATA DEDICATA AI PITCH



Appuntamento domani, a partire dalle 15.00, con la presentazione del Progetto Epicentre, nato con l'obiettivo di realizzare nuove catene del valore inter-settoriali attraverso un ecosistema tridimensionale PIC - Cluster - Imprese finalizzato a valorizzare il potenziale innovativo delle PMI, le capacità di networking dei cluster e quelle di scaling up delle imprese.

Con un chiaro impatto economico, Epicentre fornirà un sostegno finanziario di 1,05 milioni di euro alle PMI coinvolte nel progetto per stimolare la transizione green e digitale in Europa nei settori: digital, fintech, health e agri-food.

Il Distretto lavorerà al fianco della Asociación Cluster Digital De Catalunya e Lietuvos Nesto Bazarūnaijs Asociacija.

L'evento di presentazione sarà coperto nell'ambito della prima giornata dei virtual brokerage event promossi dalla rete Enterprise Europe Network per Innovation Village 2022.

Per partecipare è necessario registrarsi.

[Agenda](#)

[Registrali per partecipare alla presentazione](#)

[Full CBIOS newsletter](#)



EPICENTRE - EMPOWERING INDUSTRIAL «COSYSTEMS TO BOOST CLUSTER FACILITATED GREEN AND DIGITAL TRANSITION IN EUROPE  
PUBBLICATA LA CALL FOR EXPRESSION OF INTEREST  
DEDICATA ALLE CORPORATE



Il Progetto Epicentre entra nel vivo con la pubblicazione della Manifestazione di Interesse dedicata alle corporate attive in ambito: Salute, Food, Digitale e FinTech. Possono aderire tutte le imprese interessate a partecipare a un programma di open innovation per accrescere il proprio potenziale innovativo e la propria competitività.

L'iniziativa, finanziata nell'ambito del Single Market Programme dell'Unione europea, nasce per realizzare nuove catene del valore intersettoriali attraverso un ecosistema tridimensionale PMI - Cluster - Imprese finalizzato a valorizzare il potenziale innovativo delle PMI, la capacità di networking dei cluster e quella di scaling up delle imprese.

Il progetto fornirà un sostegno finanziario di 1,05 milioni di euro alle PMI e startup coinvolte nel progetto per stimolare la transizione green e digitale in Europa.

Il Distretto lavora al fianco della Associazione Cluster Digital De Catalunya e Lietuvos Maisto Bepuolimojimo Asociacija.

Per rispondere alla Call c'è tempo fino al 20 gennaio 2023.

[Rispondi alla Manifestazione di Interesse](#)

[Full CBIOS newsletter](#)

**Distretto Campania Bioscience  
Al via il progetto Europeo Epicentre**



Il Distretto Campania Bioscience è tra i partner del progetto Europeo Epicentre, nato con l'obiettivo di realizzare nuove catene del valore intersettoriali attraverso un ecosistema tridimensionale PMI - Cluster - Imprese finalizzato a valorizzare il potenziale innovativo delle PMI, la capacità di networking dei cluster e quella di scaling up delle imprese. Con un chiaro impatto economico, Epicentre fornirà un sostegno finanziario di 1,05 milioni di euro alle PMI coinvolte nel progetto per stimolare la transizione green e digitale in Europa nei settori: digital, fintech, health e agri-food.



Dal 26 al 27 settembre, il Distretto Campania Bioscience parteciperà all'ottava edizione della Conferenza europea del Cluster, promossa dalla Commissione europea, in collaborazione con il Ministero ceco dell'Industria e del Commercio, sotto la presidenza ceca del Consiglio dell'UE. Organizzato con il supporto della European Cluster Collaboration Platform (ECCP), l'evento riunisce esponenti politici, manager, professionisti. Il 26 settembre mattina si terrà un evento di matchmaking. Nel corso dell'evento avrà luogo il kick off meeting del progetto Epicentre.

[Full Alisei newsletter](#)

Se non leggi correttamente questo messaggio, [clicca qui](#)



Dicembre 2022

**Progetto Epicentre: potenziamento dell'ecosistema industriale e della transizione ecologica e digitale in Europa**



Financed by the European Union under the Horizon programme and the Operational Program for the Campania region, with the support of the Campania Region.

Il Progetto Epicentre, che vede tra i propri partner Campania Bioscience, nasce con l'obiettivo di realizzare nuove catene del valore intersettoriali attraverso un ecosistema tridimensionale PMI - Cluster - Imprese finalizzato a valorizzare il potenziale innovativo delle PMI, la capacità di networking dei cluster e quella di scaling up delle imprese. E' stata recentemente pubblicata la manifestazione di interesse e il relativo form per le application delle corporate interessate a portare avanti processi di open innovation in ambito Health, Digital, Food e Fintech.

SCARICA LA PRESENTAZIONE: [CLICCA QUI](#)

[LINK ALLA CALL](#)

[Full Alisei newsletter](#)



HIGHLIGHTS



Call for Expression of Interest - EPICENTRE Project

EPICENTRE Consortium's partners are looking for corporates interested in participating in an open innovation programme, that will enable you to increase our innovation capacity working with the most promising European start-ups and SMEs on solving your future technological challenges. Epicentre offers selected corporates:

- The opportunity to build new innovation capability
- A consultant service to better define your needs and joint goals to facilitate the matchmaking
- A tailor made, rolling service to select suitable startups providing solutions able to address the pre-defined corporate situations
- Deployment of prototypes in real environments through financial support to SMEs and STARTUPS
- Explore potential partnership agreements

Apply Now! - Open until 30 January 2023

[Full CEBR newsletter](#)



La tua azienda è alla ricerca di un supporto per intraprendere un percorso di Open Innovation? Hai rilevato una forte esigenza di innovazione e sei alla ricerca di supporto per soddisfarla? Il progetto EPICENTRE, finanziato dalla commissione europea, supporta l'arrivo e la realizzazione di programmi di collaborazione tra corporati, PMI e startup con focus su transizione green e digitale.

- Le iniziative è rivolta alle corporati dei settori:
- HEALTH
  - DIGITAL and FINTECH
  - AGRIFOOD

Quali benefici può portare il progetto EPICENTRE alla tua azienda?

- Collaborare con startup che rispondono alle tue esigenze di innovazione
- Iniziare e contribuire in modo strutturato con un progetto di open innovation o incrementare l'efficacia di percorso già intrapreso
- Scoprire nuove idee innovative con elevato potenziale di crescita, che rispondono alle sfide di un'industria europea più digitalizzata e più verde
- Accelerare, validare ed esplorare il potenziale trasferimento al mercato delle soluzioni innovative
- Attivare un programma "Go International" per l'identificazione di potenziali mercati target

COMPILA LA MANIFESTAZIONE DI INTERESSE

Cogli l'opportunità di potenziare la tua vocazione all'Open Innovation, compila la manifestazione di interesse entro il 30 gennaio! [Vai alla pagina](#) per approfondire.

Reti di EPICENTRE:

- Spagna - Cluster Digital de Catalunya (CLOI)
- Italia - Competence BioScience (CBOS)
- Lituania - Lietuvos mokslo ir inovacijų asociacija (LITMISA)




Contattaci su WhatsApp | LinkedIn | Telegram | Facebook | Instagram | YouTube

Ricevi queste email perché sei registrato sul nostro sito e hai dato il consenso a ricevere comunicazioni email da parte nostra. Smau, Smau Servizi e newsletter@smau.it, Milano, 20123 Milano IT

[Full Smau newsletter](#)

3) Events and B2B meetings with stakeholders for the launch of the open call for the Expression of Interest (EEN - EIT HEALTH - INNOVATION VILLAGE - SMAU - I3P ACCELERATOR - SWEDEN BUSINESS):



3 November 2022 - 17 November 2022  
Online, Italy

VIRTUAL BROKERAGE  
EVENT @ INNOVATION  
VILLAGE 2022

Thursday, November 03, 2022

15:00 - 16:30

Presentation of the project called Epicentre - EmPowering Industrial eCosystems to boost cluster facilitated green and digital transition in Europe

On-line

Session ended

DESCRIPTION:

**Epicentre - EmPowering Industrial eCosystems to boost cluster facilitated green and digital transition in Europe**

Thursday, Oct. 3 2022 - 3:00 PM

Speaker: Roberta Lauro, Distretto Campania Bioscience

**EmPowering Industrial eCosystems to boost cluster facilitated green and digital transition in Europe- EPICENTRE** is a project funded by the Single Market Programme (SMP), call joint Cluster Initiatives (Euroclusters) for Europe's recovery, from the European Commission.

EPICENTRE project envisions to create new cross-sectoral/border value chains by establishing a SMEs - Clusters - Corporate ecosystem in the following areas: ICT, Fintech, Health and Agri-food. It is a program of accompaniment, acceleration, validation, and transfer to the market innovative solutions between SMEs and Corporates in 2 calls.

**GENERAL OBJECTIVES**

1. To create new cross-sectoral value chains from Digital and Fintech to Health and Agri-food.
2. To deliver a strong combination of support instruments and tools for scaling up innovation, matchmaking and demonstrating innovative market-oriented applications developed by outstanding SMEs that respond to the challenge of a more digitized and green European Industry.
3. To select and engage 50 innovative concepts with high market and growth potential in a dynamic and challenging business support program aimed at facilitating the adoption of new processes and technologies by SMEs, and comprising 3-phases: LAUNCH-SUSTAIN-DRIVE.
4. To provide an end-to-end business support services program to support the SMEs.
5. To deliver a "Go International Programme" for EPICENTRE clusters.
6. To take a comprehensive strategy to effectively carry out communication and dissemination activities.

**PARTNERS**

Cluster Digital de Catalunya - Catalonia, Spain (ICT value chain)





























Campania Bioscience - Italy (Life sciences)

Lithuanian Food Exporters Association - Lithuania (Food sector)

## [Agenda](#)

During the Innovation Village event we held an online webinar, organised with the support of EEN, on the Epicentre project in order to launch the EoI for corporate. (follows the list of participants)

## List of participants

City	ID	Participant	Organisation	Country
Lind ob Velden	299	 Marco Ottella	Xtremion Research & Innovation e.U.	Austria
Sofia	149	 Georgi Peev	Interconsult	Bulgaria
Rijeka	453	 Filip Margan	INOMAD.WORLD	Croatia
Cologne	509	 Anush Hayrapetyan	Nuromedia GmbH	Germany
Szeged	481	 Dávid Kovács Rezsuk	SolvElectric Technologies	Hungary
Bologna	480	 Oscar Amerighi	ENEA	Italy
Napoli	479	 Filippo Ammirati	Tec-Up	Italy
Napoli	511	 Achille Masturzo	BioTekNet SCpA	Italy
Napoli	485	 Nadia Mazarella	Bioteknet	Italy
Naples	488	 Benedetta De Felice	Campania Bioscience SCarI	Italy
NAPOLI	504	 LUCA D'ORTA	DISTRETTO CAMPANIA BIOSCIENCE SCARL	Italy
Naples	489	 Francesca Vacca	Distretto Tecnologico Campania Bioscience	Italy
Napoli	490	 Concetta D'Orio	CRdC BioTekNet SCpA	Italy
napoli	482	 Stefania Spinelli	Centro Regionale di Competenza in biotecnologie I...	Italy
Napoli	491	 Carla Cannavacciuolo	Centro Regionale di Competenza in Biotecnologie I...	Italy
Naples	475	 Daniela Russo	Distretto Tecnologico Campania Bioscience	Italy
Napoli	140	 Roberta Lauro	Distretto Campania Bioscience	Italy
Gdansk	440	 Shemmy Majewski	DLabs.AI	Poland
Timișoara	471	 Bozga Emilia	West University of Timisoara	Romania
Iasi	50	 Anca Iftene	BioNanoTech Project Support Centre - "Petru Poni" ...	Romania
Iasi	302	 Raluca-Oana Andone	BioNanoTech Project Support Center of the "Petru P...	Romania
Iasi	487	 Sinziiana Vlad	BioNano Tech Support Centre, "Petru Poni" Institut...	Romania
Tres Cantos	484	 Raul Alvarez	KALLISTO AI	Spain
Madrid	496	 Luis Rico	Smart Food Systems	Spain
Barcelona	483	 Núria Serra	Clúster Digital de Catalunya	Spain
KOCAELI	261	 Rasim Serim	HEY MOBILITY TEKNOLOJI A.S.	Turkey
Dolyna	51	 Volodymyr Petriv	BBM GROUP	Ukraine
London	507	 Ahmad Khan	Atlantis Innovation Ltd	United Kingdom

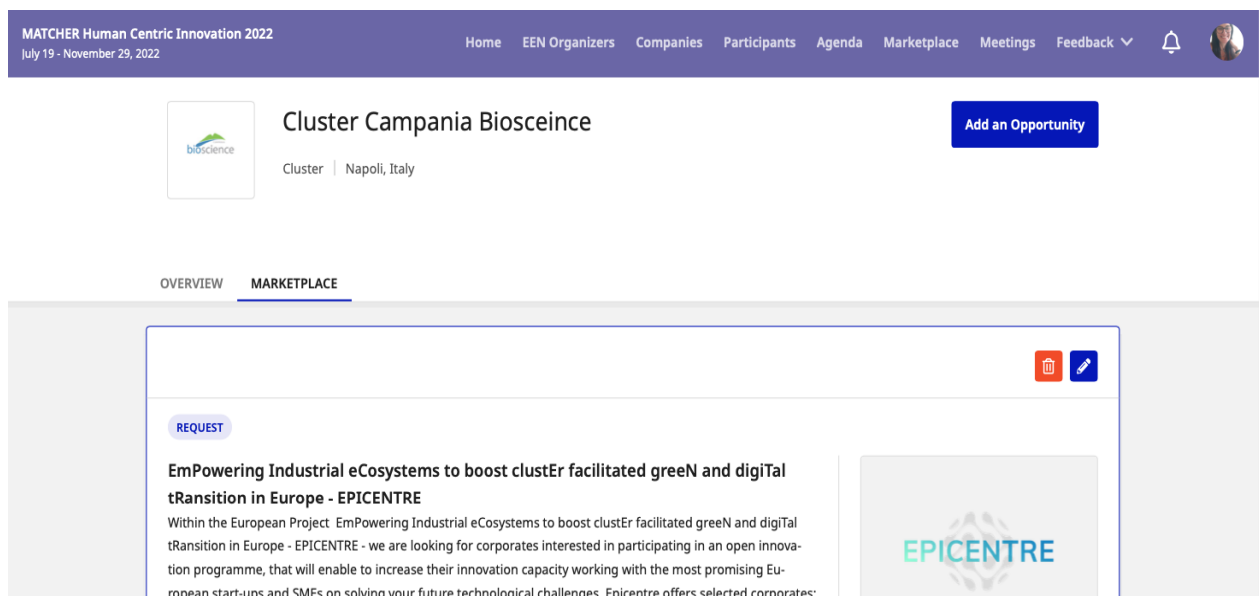
### [List of participant to the EEN Event](#)

**STAKEHOLDERS Engagement** - We also involved as stakeholders the I3P accelerator in order to receive some input about open innovation and future trend of innovation



[Call with I3P Accelerator](#)

In order to maximise the involvement of corporate entities operating in the various areas covered by the EPICENTRE project, we also participated to a matchmaking event: **MATCHER Human Centric Innovation 2022 event** in which we have the opportunity to present the project and intercept some strategic partners and also corporate (such as Amadori)



[Publication on the website of MATCHER Human Centric Innovation 2022](#)



Once again, with the aim of increasing the involvement of strategic actors, stakeholders and companies, we presented the project and the launch of the open call for EoI for corporate at **BUSINESS SWEDEN**.



[Meeting with Business Sweden](#)

Among the most active players in the field of open innovation, both nationally and internationally, with the organisation of targeted events in Italy, Europe and the United States, we singled out **SMAU**, who in a preliminary way made themselves available for interviews and in-depth discussions on open innovation and the definition of innovation trends



### [Meeting with SMAU CEO](#)



**Distretto Tecnologico Campania Bioscience**

Cluster regionale delle Scienze della Vita

[RICHIEDI UN INCONTRO](#)

**Start-up**

**in**

[www.campaniabioscience.it](http://www.campaniabioscience.it)

Via Luigi (de) Cordero, 7  
Napoli (Napoli) - 81100  
Tel +39 081 5987677

**Descrizione**

Il Distretto Tecnologico Campania Bioscience nasce nel 2015 per rispondere all'esigenza di coordinare e valorizzare il know-scientific e l'offerta dei player industriali operanti sul territorio campano nell'ambito delle Scienze della Vita, nell'ottica europea della smart specialization. Il Distretto Tecnologico Campania Bioscience è costituito da circa 50 società e da 7 organismi di ricerca, oltre 40 imprese e una struttura di Trasferimento Tecnologico. Le attività del Distretto si articolano in aree tematiche ad alto potenziale di innovazione e con un elevato impatto sui relativi mercati di riferimento: biotecnologie industriali, tecnologie innovative per l'industria biomedica, oncologia, terapie innovative, genetica e genomica, cosmeceutica, nutraceutica e cibi funzionali.



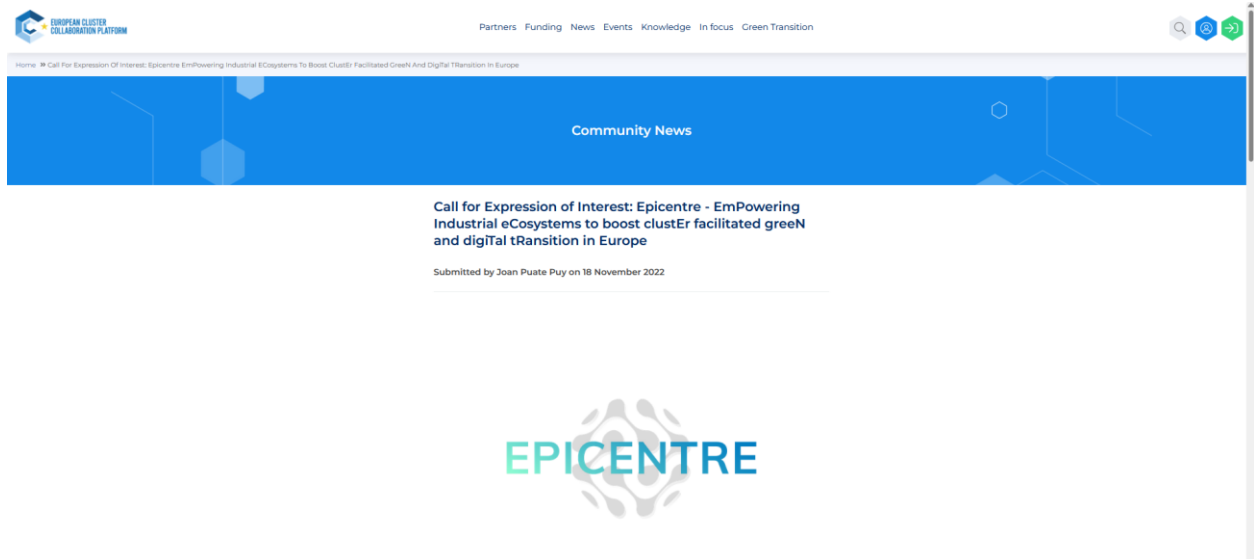
### EPICENTRE - EmPowering Industrial eCosystems to boost clustEr facilitated greenN and digiTal tRansition in Europe

EPICENTRE, progetto europeo finanziato dal programma Joint Cluster Initiatives – Euroclusters, ha come obiettivo principale la realizzazione, in un'ottica di Open Innovation, di un ecosistema tridimensionale tra PMI (Startups)- CLUSTER - CORPORATE che operano nelle seguenti aree: Digital, Fintech, Salute e Agroalimentare. Si tratta di un programma di accelerazione, validazione ed esplorazione del potenziale trasferimento al mercato di soluzioni innovative partendo dalle esigenze delle big companies, che verranno raggruppate in specifiche aree di interesse (Key Performance Areas- KPAs). Sulla base delle Key Performance Areas identificate saranno lanciati 2 bandi per selezionare 50 imprese innovative (PMI e STARTUP) che saranno guidate in un programma di sostegno dinamico e stimolante, volto a facilitare l'adozione di nuovi processi e tecnologie e a favorire la transizione green&digital.

### [Participation to the SMAU Event](#)

#### 4) Screenshot of the Expression of Interest - link and list of participants

Bringing together all the information gathered from stakeholders and strategic actors related to open innovation, we drafted an expression of interest that was published on the Cluster Collaboration Platform webpage and also on the website of all project partners.

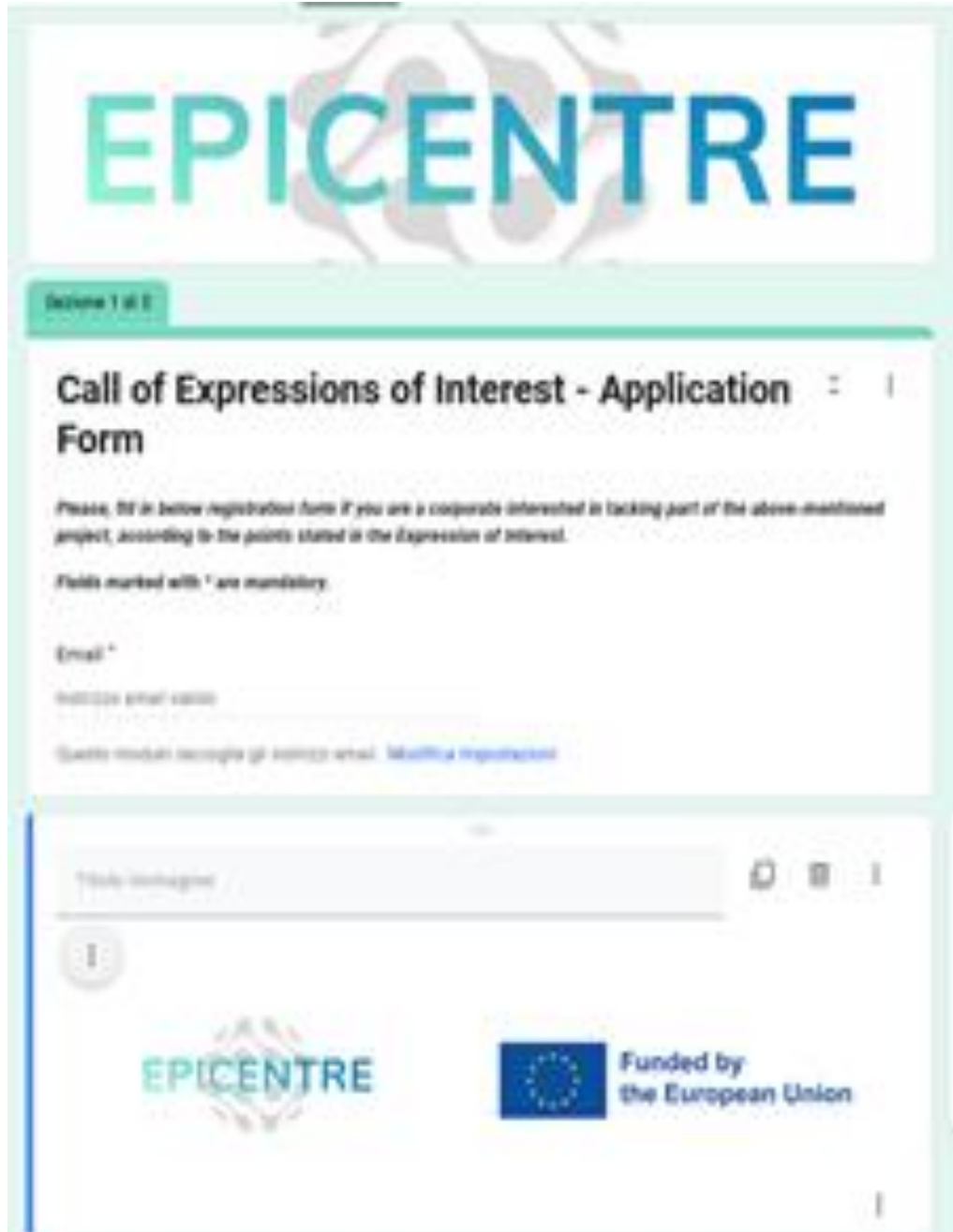


Link to the Call for Expression of Interest: <https://clustercollaboration.eu/community-news/call-expression-interest-epicentre-empowering-industrial-ecosystems-boost>

Read the news on CBIOS's website: <https://www.campaniabioscience.it/epicentre-manifestazione-di-interesse-corporate/>

Read the news on Clùster Digital's website: <https://clusterdigital.cat/projecte-epicentre/?lang=en>

Read the news on SMART Food Cluster's website: <http://www.smartfoodcluster.com/projects/>



The image shows a screenshot of a web application form titled "Call of Expressions of Interest - Application Form". At the top, the word "EPICENTRE" is displayed in large, bold, blue letters. Below the title, there is a section for "Screen 1 of 1". The main heading is "Call of Expressions of Interest - Application Form". Below this, there is a paragraph of text: "Please, fill in below registration form if you are a corporate interested in taking part of the above-mentioned project, according to the points stated in the Expression of Interest." followed by "Fields marked with \* are mandatory." There is a form field for "Email \*" with a placeholder "Indirizzo email valido" and a link "Scopri i moduli disponibili per questo evento" and "Modifica registrazione". At the bottom of the form, there are logos for "EPICENTRE" and "Funded by the European Union".

[Full Application Form](#)

## List of participants

### Organisation

Name of the organisation

45 risposte

Crowe Spain
Starshot Software
Idilia Foods slv
TEYME TECNOLOGIA AGRICOLA, S.L.U.
ANGELINI CONSUMER
AC Friman S.A
Acceleralia
SAS
Amadori
Paolo Mariani
Andresani multimediale di Andrea Andresani
University of Turin (and others)
SEEDS srl
Is CLEAN AIR Italia S.r.l.
BBB
XERA S.r.l.
Stefano Perin
myHealthbox
R & T ltd
masterbossitalia - the omnichannel experience
Apulia Software srlv
gibertini elettronica
Made in Italy Bio di Giovanna De Micco
Dinets srl
Kellogg's Manufacturing Valls S.L
Istituto Italiano Ricerca e Sviluppo Organismo di Ricerca S.r.l
ENISMARO

Mwc srl - Medical World Connection
Miguel Torres, SA
Almaviva Digitaltec
ORACLE IBERICA
itbid
Social Things S.R.L.
Damor Farmaceutici
Code This Lab srl
SCAI LAB SRL
Code Architects srl
Extra Red
Villa delle Ginestre Srl
Laser&Engineering Technologies Cluster
Lithuanian Photovoltaics Technology Cluster
Kauno grūdai
Universitat de Barcelona
Vikonda Group

## 5) Screenshot of the questionnaire



### Corporate Survey

#### Epicentre - EmPowering Industrial eCosystems to boost clustEr facilitated green and digiTal tRansition in Europe

#### 1. During the last three years, did your enterprise introduce any:

	Yes	No
<u>New or improved goods</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>New or improved services</u>	<input type="checkbox"/>	<input type="checkbox"/>

#### 2. Who developed these product innovations?

*Tick all that apply*

- Your enterprise by itself
- Your enterprise together with other enterprises or organisations
- Your enterprise by adapting or modifying products originally developed by other enterprises or organisations
- Other enterprises or organisations

#### 3. During the last three years, did your enterprise introduce any of the following types of new or improved processes that differ significantly from your previous processes?

	Yes	No
Methods for producing goods or providing services (including methods for developing goods or services)	<input type="checkbox"/>	<input type="checkbox"/>
Logistics, delivery or distribution methods	<input type="checkbox"/>	<input type="checkbox"/>
Methods for information processing or communication	<input type="checkbox"/>	<input type="checkbox"/>
Methods for accounting or other administrative operations	<input type="checkbox"/>	<input type="checkbox"/>

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- |  |                          |                          |
|--|--------------------------|--------------------------|
| Business practices for organising procedures or external relations                             | <input type="checkbox"/> | <input type="checkbox"/> |
| Methods of organising work responsibility, decision making or human resource management        | <input type="checkbox"/> | <input type="checkbox"/> |
| Marketing methods for promotion, packaging, pricing, product placement or after sales services | <input type="checkbox"/> | <input type="checkbox"/> |

**4. Who developed these process innovations?**

*Tick all that apply*

- |   |                          |
|---|--------------------------|
| Your enterprise by itself   | <input type="checkbox"/> |
| Your enterprise together with other enterprises or organisations  | <input type="checkbox"/> |
| Your enterprise by adapting or modifying processes originally developed by other enterprises or organisations | <input type="checkbox"/> |
| Other enterprises or organisations  | <input type="checkbox"/> |

**5. Select the approach that you would like to implement using such open innovation service? (Please, prioritise the following options)**

Scouting mission	<input type="checkbox"/>
Hackathon (design sprint-like event in which ICT developers collaborate intensively on software projects)	<input type="checkbox"/>
Sharing resources	<input type="checkbox"/>
Challenge prize	<input type="checkbox"/>
Corporate accelerator	<input type="checkbox"/>
Corporate venture capital	<input type="checkbox"/>
Excubator (designed to support startups from the very beginning with ideation to the very end)	<input type="checkbox"/>
Corporate incubator (similar to accelerators, typically three months support to start-ups)	<input type="checkbox"/>
Strategic partnership	<input type="checkbox"/>
Acquisition	<input type="checkbox"/>

**6. What are the most interesting frontiers for the company's future development?**

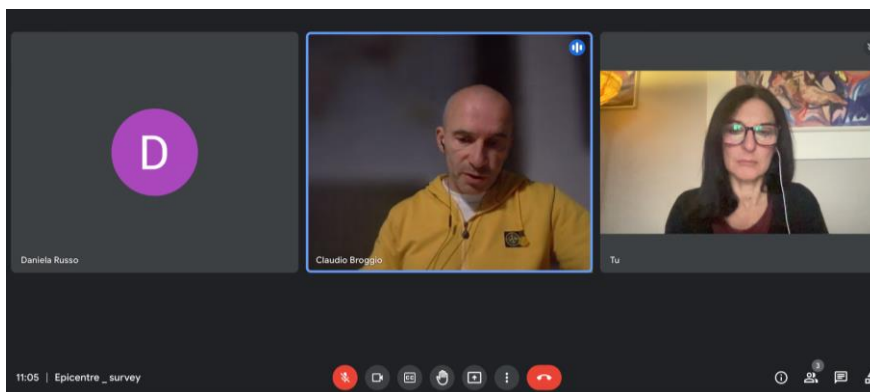
|

**7. Which technologies would you like to be implemented foster innovation in your company?**

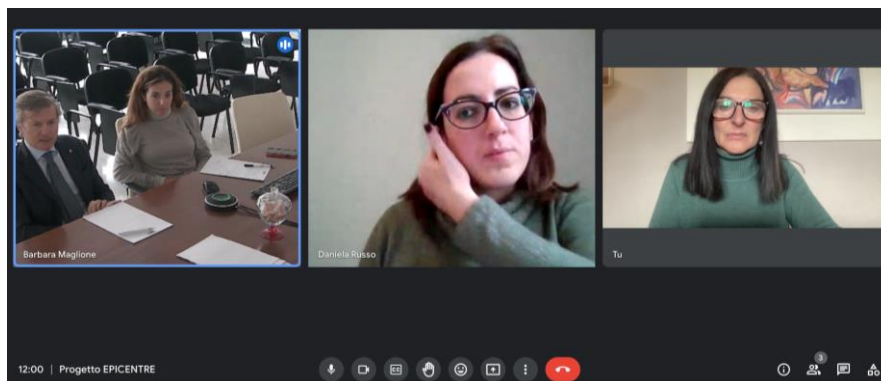
**8. Which technological challenge would you like to propose to the innovative startups and SMEs that will participate in the project Epicentre?**

**9. What challenges will your industry face in the coming years? How are you preparing?**

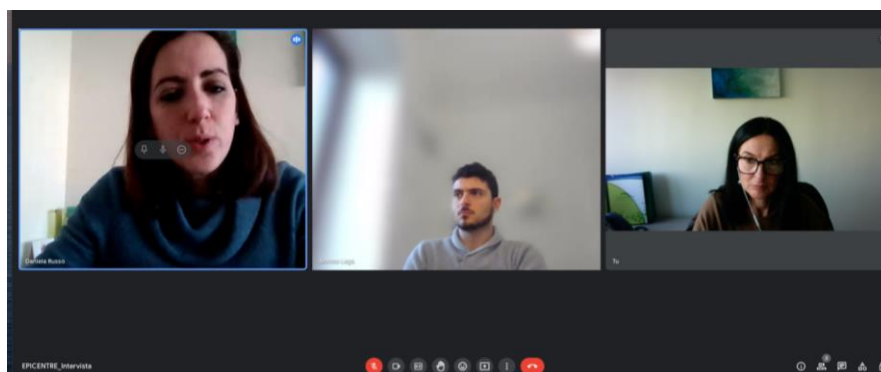
## 6) Screenshot of some of the main Interviews and list of participants



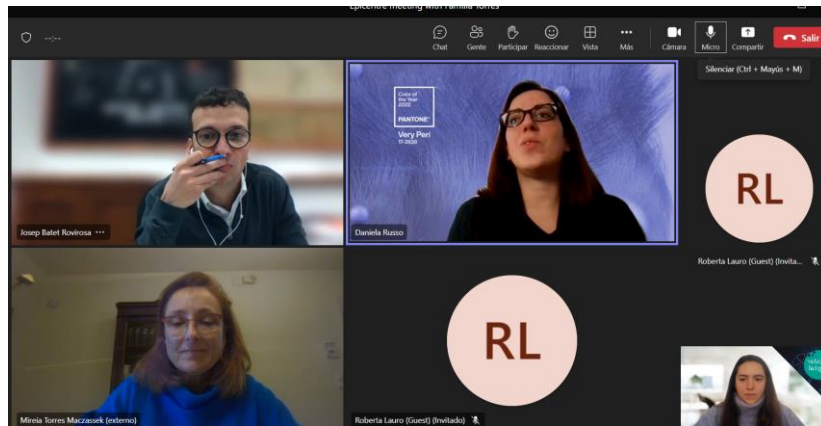
SAS Interview



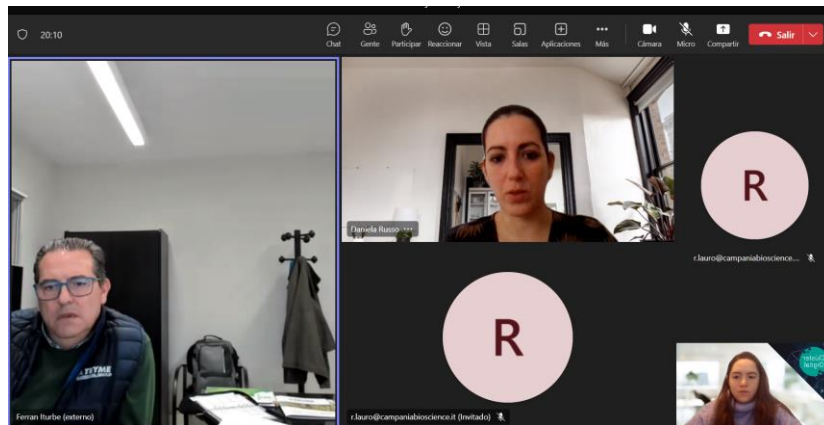
DAMOR Interview



ANGELINI Interview



Torres Interview



Teyme Interview

#### 4. Assessment of KPAs and challenges

The result of the desk analysis, the business needs study, based on surveys, interviews and B2B meetings is the outlining of 3 KPAs for each sector DIGITAL/ FINTECH - AGRI FOOD and HEALTH. Within each KPA, several aspects where innovation could bring improvements are listed. And for each sector, 2 CHALLENGES were derived from specific business needs that innovative SMEs can respond to, in order to meet the innovation needs of large companies.

**TOPIC 1: Fostering Cross- Sectoral Innovation in DIGITAL - ICT & FINTECH**

**Key Performances Areas**

**SUSTAINABILITY**

Circular Economy  
Economic and environmental sustainability  
Energy saving

**NEW DIGITAL SOLUTION**

Patient monitoring  
Edutech  
Digital Twin solutions  
Industry 4.0  
Gamification  
Digital Transformation

**SECURITY**

Block chain  
Data protection and cyber security  
Data sharing on cloud  
Training and Gamification  
Digital identity

**Challenges**

**DIGITAL – FINTECH CHALLENGE 1:** How to apply digital finance solution (fintech) to cross- sectoral fields (data science, AI, blockchain, machine-learning, cybersecurity)

**DIGITAL – FINTECH CHALLENGE 2:** Digital Payment and Digital Identity (block chain, data sharing, digital transformation, gamification)

**TOPIC 2: Fostering Cross- Sectoral Innovation in AGRIFOOD**

**Key Performances Areas**

**SUSTAINABILITY**

New packaging materials  
Reducing environmental impact  
Reduction of production costs  
Reuse of food and production waste  
Reduction of energy consumption  
Smart water resource management (for animal farming or soil and horticultural irrigation)

**AUTOMATION**

IoT  
Robotic process automation  
Artificial intelligence  
Cloud and big data processing  
Blockchain

**SECURITY**

Plant and animal welfare monitoring  
Cold chain  
Food service safety  
Data protection

**Challenges**

**AGRIFOOD CHALLENGE 1:** Monitoring the health status of food production and shelf life extension (security)

**AGRIFOOD CHALLENGE 2:** New packaging materials and smart use of resources (sustainability, automation and security)

**TOPIC 3: Fostering Cross- Sectoral Innovation in HEALTH**

**Key Performances Areas**

**SUSTAINABILITY**

Sustainability and reduction of production costs  
Waste circulation, packaging and reuse

**VIRTUAL CARE**

IoT  
Robotics  
Artificial Intelligence  
Cloud and Big data Analysis  
Digital solution  
Cyber security and related security aspects

**NEW PRODUCTS**

Circular economy and reuse of food waste  
Organic production  
Pharmaceuticals derived from natural extractions  
Medical devices based on the principles of play and education

**Challenges**

**HEALTH CHALLENGE 1:** Development of new digital solutions in the learning and behavioural sphere that can be used by patients and families (virtual care and new products)

**HEALTH CHALLENGE 2:** New therapeutic solutions derived from natural products and organic extractions (sustainability and new products)

**4.1. Numbers**

This paper is the result of an extensive study of various research and publications on open innovation, innovation trends, market analysis of the health, food, digital and fintech sectors. Furthermore, the results were implemented by a series of activities such as, B2B meetings, webinars, participation in events and an intensive promotion activity on social channels of the open call for corporates, in order to increase the number of participants and the material at our disposal to define the KPAs.

**Open call for corporate KPIs:**

~ 119 corporates have been directly contacted and informed about the objectives of the EPICENTRE project.

62 Expressions of Interest

27 Questionnaires

20 Interviews for corporates and stakeholders


**Open call Newsletters KPIs :**

126K recipients, 25 K opens (20.56%) - 36K total (which means more than 10K people reopened it!) and a click-through rate of 2.66%.

- IN/FB/IG: 750 reach | 1.8% CTR | 3.4% interest rate

## 4.2. Letter of intent signed by corporate

In order to receive concrete support from the corporates involved in the aforementioned process that will form the basis of the open call, and also to involve them in a monitoring activity during the acceleration phases, we invited the companies to sign the following Letter of Intent (with the technical annex in which we present the result about the challenges identified):


<your logo>

### LETTER OF INTENT

<Name, Address, Date>

**Subject:** Letter of Intents between <ORGANIZATION/INITIATIVE NAME> and the EPICENTRE project: “EmPowering Industrial eCosystems to boost cluster facilitated green and digiTal tRansition in Europe”

Having read and approved the KPAs and challenges identified within the EPICENTRE project (Technical Annex), as <position> at <corporate> I confirm, with this letter of intent, our interest in the activities, the ecosystem and the outcomes proposed by the EPICENTRE project. Further, I confirm our commitment to the required efforts in the different phases of collaboration with SMEs, within their areas of expertise. In particular, our engagement in the EPICENTRE project refers to:




- having meetings with EPICENTRE partners and selected SMEs during all phases of the project to confirm, monitor, and further describe our needs.
- being part of the EPICENTRE corporate board.
- confirm willingness to sign a non-disclosure agreement (NDA) with the selected SMEs, specifying that we will not use the content of the technologies submitted by the SMEs for purposes other than engagement with the SME.

Best regards,

Legal representative


-----

Mr./Ms. ....

1

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## TECHNICAL ANNEX

The technical annex includes the Key Performance Areas in which the company wishes to explore cooperation opportunities with SMEs.

The KPAs for the DIGITAL/FINTECH - AGRI-FOOD and HEALTH sectors and the challenges identified are the result of in-depth on-desk analysis and needs assessment based on questionnaires, interviews, and meetings with corporate. Within each KPA, several aspects, where innovation could bring improvements, are listed. For each sector, 2 CHALLENGES were identified, derived from specific innovation needs to which SMEs are called to respond.

