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High-Growth Entrepreneurship, Regional Agglomerations, and Policy Challenges

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wicked acceleration labs

Agenda

Innovation ecosystems and entrepreneurial ecosystems

Types of entrepreneurship and contributions to economic growth

Unicorns, scaleups, and the spatial concentration of scaleup activity

Challenges for Finnish entrepreneurship policy

Global Innovation Index 2024 Rankings

Finland is #7, even with UK and Singapore.
China, Japan behind.

GII measures Innovation Inputs and Outputs.
Innovation Inputs: Institutions, Human Capital & Research, Infrastructure, Market Sophistication, and Business Sophistication
Innovation Outputs: Knowledge & Technology Outputs, Creative Outputs (a total of 78 indicators)

GII does not measure entrepreneurial outputs, only Unicorn valuation as % of GDP

GII rank	Economy	Score	Income group rank	Region rank
1	Switzerland	67.5	1	1
2	Sweden	64.5	2	2
3	United States of America	62.4	3	1
4	Singapore	61.2	4	1
5	United Kingdom	61.0	5	3
6	Republic of Korea	60.9	6	2
7	Finland	59.4	7	4
8	Netherlands (Kingdom of the)	58.8	8	5
9	Germany	58.1	9	6
10	Denmark	57.1	10	7
11	China	56.3	1	3
12	France	55.4	11	8
13	Japan	54.1	12	4
14	Canada	52.9	13	2
15	Israel	52.7	14	1
16	Estonia	52.3	15	9
17	Austria	50.3	16	10
18	Hong Kong, China	50.1	17	5
19	Ireland	50.0	18	11
20	Luxembourg	49.1	19	12
21	Norway	49.1	19	12
22	Iceland	48.5	21	14
23	Australia	48.1	22	6
24	Belgium	47.7	23	15
25	New Zealand	45.9	24	7
26	Italy	45.3	25	16
27	Cyprus	45.1	26	2
28	Spain	44.9	27	17
29	Malta	44.8	28	18

Source: Global Innovation Index 2024

GII 2025 Rankings by Pillar

Table 3 Heatmap: GII 2025 rankings overall and by innovation pillar, 2025

Economy	Overall GII	Insti-tutions	Human capital and research	Infra-structure	Market sophist-ication	Business sophist-ication	Knowledge and technology outputs	Creative outputs
Switzerland	1	3	6	5	3	5	2	1
Sweden	2	12	3	4	9	2	4	2
United States	3	16	13	32	1	1	3	5
Republic of Korea	4	20	1	7	5	4	9	4
Singapore	5	1	2	19	6	3	7	15
United Kingdom	6	25	7	23	4	17	5	3
Finland	7	5	5	3	11	12	8	16
Netherlands (Kingdom of the)	8	11	14	30	12	7	10	6
Denmark	9	2	11	8	16	11	13	9
China	10	44	20	6	13	8	1	14
Germany	11	23	4	28	22	13	11	8
Japan	12	22	18	17	10	6	12	18
France	13	33	15	18	14	14	15	7
Israel	14	36	19	45	15	9	6	28
Hong Kong, China	15	8	12	21	2	23	30	17
Estonia	16	18	36	10	7	26	19	12
Canada	17	15	10	24	8	19	18	24
Ireland	18	10	24	13	36	15	14	21
Austria	19	21	9	12	30	16	21	23
Norway	20	9	22	1	21	20	32	22

Source: Global Innovation Index 2025

GII Top Innovation Clusters by Volume

Table 1 Top innovation cluster by economy or cross-border region ranked among the top 100, 2025

Rank	Cluster name	Economy	Top applicant	Top organization
1	Shenzhen–Hong Kong–Guangzhou	CN / HK	Huawei	Sun Yat Sen University
2	Tokyo–Yokohama	JP	Mitsubishi Electric	University of Tokyo
3	San Jose–San Francisco	US	Google	Stanford University
4	Beijing	CN	BOE Technology	Tsinghua University
5	Seoul	KR	Samsung Electronics	Seoul National University
8	London	GB	Nicoventures Trading	University College London
12	Paris	FR	Safran Aircraft Engines	Sorbonne Université
16	Singapore	SG / MY	National University of Singapore	National University of Singapore
19	Tel Aviv–Jerusalem	IL	Tel Aviv University	Hebrew University Of Jerusalem
21	Bengaluru	IN	Samsung Electronics	IISC - Bangalore
22	Amsterdam–Rotterdam	NL	TNO	Utrecht University
27	Munich	DE	BMW	Technical University of Munich
32	Stockholm	SE	LM Ericsson	Karolinska Institutet
33	Toronto	CA	DH Technologies Development	University of Toronto
36	Sydney	AU	Cochlear	University of Sydney
40	Zürich	CH	ETH Zürich	ETH Zürich
41	Taipei–Hsinchu	TW*	MediaTek	National Taiwan University
42	Copenhagen	DK	Novozymes	University of Copenhagen
45	Barcelona	ES	Hewlett-Packard	University of Barcelona
48	Moscow	RU	Samsung Electronics	Lomonosov Moscow State University
49	São Paulo	BR	Braskem	Universidade de São Paulo
55	Brussels–Antwerp	BE	Agfa	KU Leuven
56	Milan	IT	Pirelli Tyre	University of Milan
58	Istanbul	TR	Arcelik	Istanbul Technical University
60	Helsinki	FI	Nokia	University of Helsinki
63	Tehran	IR	Abdolahad Mohammad	University of Tehran
71	Dublin	IE	Eaton Intelligent Power	University College Dublin
74	Vienna	AT	JT International	Medical University of Vienna
79	Mexico City	MX	Colgate-Palmolive	Universidad Nacional Autonoma de Mexico
83	Cairo	EG	Si-Ware Systems	Cairo University
85	Oslo	NO	Oslo University Hospital	University of Oslo
86	Kuala Lumpur	MY	MIMOS Berhad	Universiti Malaya
89	Warsaw	PL	Samsung Electronics	Warsaw University of Technology

Source: Global Innovation Index 2025

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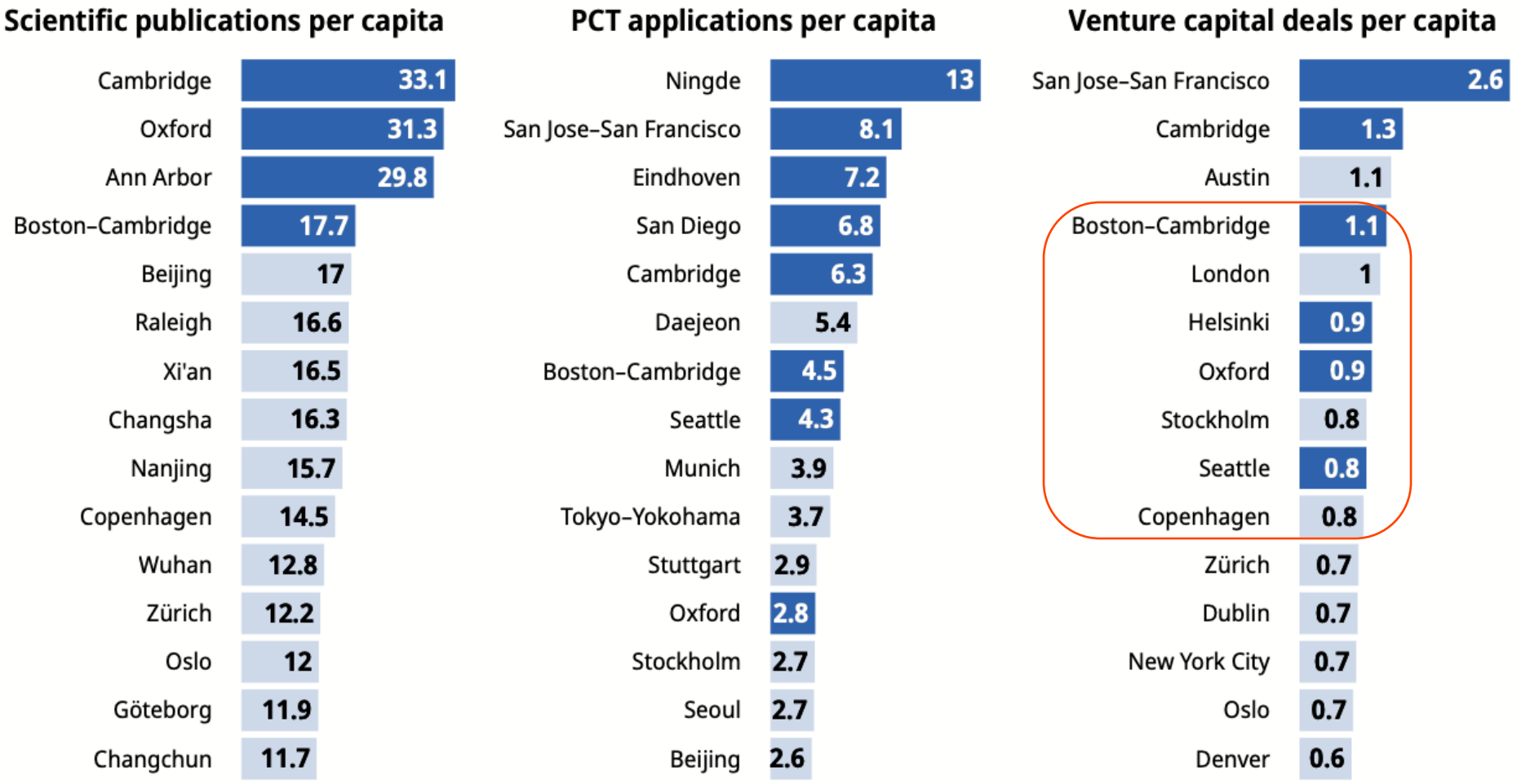
GII Innovation Cluster Intensity 2025

Cluster name	Rank per-capita	Economy	Estimated cluster population	PCT applications per capita (a)	Scientific publications per capita (a)	Venture Capital deals per capita (a)	Total innovation intensity share per capita (a)
San Jose–San Francisco	1	US	6,248,247.83	8,132.30	9,044.18	2,608.09	1.84
Cambridge	2	GB	496,263.81	6,330.69	33,133.39	1,281.58	1.43
Boston–Cambridge	3	US	4,256,509.66	4,541.89	17,659.56	1,078.82	1.02
Ningde	4	CN	425,620.67	13,031.65	732.74	9.40	1.01
Oxford	5	GB	571,650.30	2,777.71	31,340.31	897.40	0.98
Seattle	6	US	2,511,877.85	4,332.89	7,717.77	829.66	0.78
San Diego	7	US	3,919,023.10	6,816.29	5,068.23	435.06	0.77
Ann Arbor	8	US	635,676.64	1,896.99	29,806.35	464.07	0.71
Helsinki	9	FI	1,232,383.09	2,444.09	10,562.62	899.07	0.70
Eindhoven	10	NL	1,111,011.48	7,184.38	4,701.27	185.42	0.68
Stockholm	11	SE	2,160,556.25	2,746.02	8,933.16	830.34	0.67
Copenhagen	12	DK	1,692,957.72	1,838.42	14,532.85	793.88	0.66
Austin	13	US	1,955,797.52	1,337.25	4,840.02	1,136.11	0.64
Zürich	14	CH	1,953,492.70	2,044.59	12,211.46	729.97	0.62
Daejeon	15	KR	2,773,465.80	5,382.15	9,435.56	205.52	0.61
Munich	16	DE	2,800,189.73	3,901.59	9,637.42	352.83	0.57
Raleigh	17	US	1,709,143.68	1,780.03	16,613.52	512.54	0.56
Beijing	18	CN	19,486,947.46	2,555.16	17,030.58	345.21	0.55
London	19	GB	10,396,705.70	671.49	5,497.10	1,001.37	0.54
Göteborg	20	SE	838,021.98	2,491.71	11,907.68	430.78	0.52
Oslo	21	NO	1,056,409.41	789.60	11,987.21	665.46	0.49
Denver	22	US	3,075,670.63	1,129.33	6,917.26	644.74	0.44
Dublin	23	IE	1,495,531.30	612.41	6,980.80	720.15	0.44
New York City	24	US	16,074,273.77	852.61	4,655.44	701.93	0.42
Hangzhou	25	CN	7,456,224.75	1,492.44	10,887.69	376.06	0.41
Pittsburgh	26	US	1,384,918.85	1,373.11	11,599.74	368.97	0.40
Vancouver	27	CA	1,944,373.36	866.80	7,960.77	535.39	0.39
Seoul	28	KR	26,424,210.11	2,698.96	5,393.12	279.14	0.39
Tokyo–Yokohama	29	JP	36,451,951.57	3,707.04	3,176.04	141.39	0.38

Source: Global Innovation Index 2025

GII Top Innovation Intensive Clusters by Metric

Figure 4 Top 15 innovation intensive clusters, by metric per capita (in thousands), 2025



Source: Global Innovation Index 2025

Finland GII 2025 Data

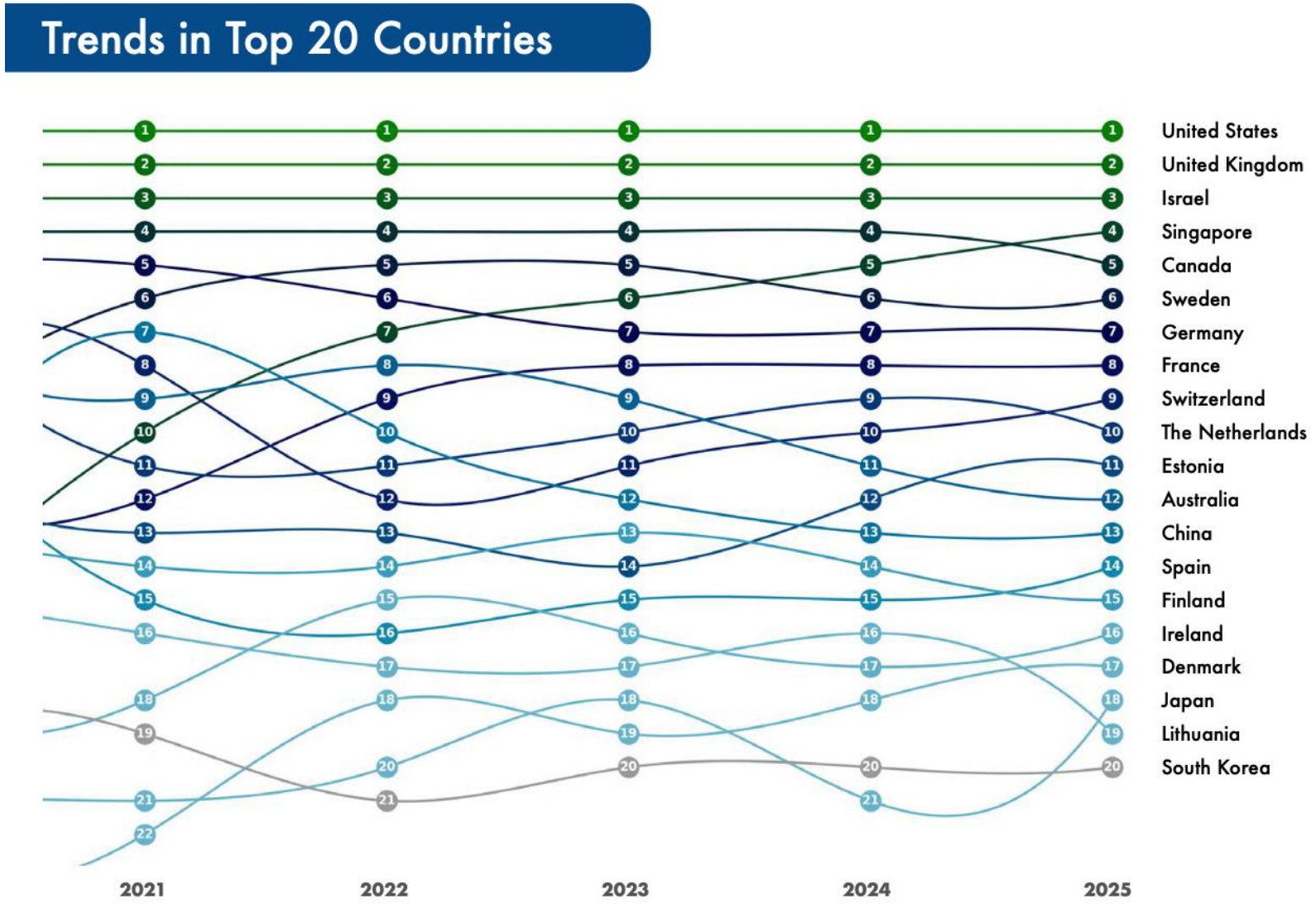
Finland 7

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
10	5	High	EUR	5.6	361.3	64,657

		Score/ Value	Rank
Institutions		**83.6**	**5** ●
1.1	**Institutional environment**	**84.6**	**11**
1.1.1	Operational stability for businesses*	83.3	14
1.1.2	Government effectiveness*	85.8	6
1.2	**Regulatory environment**	**93.7**	**3** ●
1.2.1	Regulatory quality*	87.5	7
1.2.2	Rule of law*	100.0	1 ●◆
1.3	**Business environment**	**72.4**	**14**
1.3.1	Policy stability for doing business†	78.5	9
1.3.2	Entrepreneurship policies and culture† ⏲	66.4	17
Human capital and research		**60.9**	**5** ●
2.1	**Education**	**70.0**	**8** ◆
2.1.1	Expenditure on education, % GDP ⏲	6.5	11 ◆
2.1.2	Government funding/pupil, secondary, % GDP/cap	24.8	21
2.1.3	School life expectancy, years	19.6	4 ●◆
2.1.4	PISA scales in reading, maths and science	495.1	11
2.1.5	Pupil–teacher ratio, secondary	12.6	60 ○
2.2	**Tertiary education**	**50.0**	**11**
2.2.1	Tertiary enrolment, % gross	108.1	3 ●◆
2.2.2	Graduates in science and engineering, %	29.4	25
2.2.3	Tertiary inbound mobility, %	9.3	32
2.3	**Research and development (R&D)**	**62.6**	**11**
2.3.1	Researchers, FTE/mn pop.	8,354.3	5 ◆
2.3.2	Gross expenditure on R&D, % GDP	3.1	10
2.3.3	Global corporate R&D investors, top 3, mn USD	71.0	13
2.3.4	QS university ranking, top 3*	50.5	24
Infrastructure		**67.6**	**3** ●◆
3.1	**Information and communication technology (ICT)**	**95.4**	**7**
3.1.1	ICT access*	100.0	5 ●
3.1.2	ICT use*	97.2	4 ●◆
3.1.3	Government online service*	89.1	19
3.2	**General infrastructure**	**64.3**	**8** ◆
3.2.1	Electricity output, GWh/mn pop.	14,513.4	9
3.2.2	Logistics performance*	95.5	2 ●◆
3.2.3	Gross capital formation, % GDP	24.0	64 ○
3.3	**Ecological sustainability**	**43.0**	**11** ◆
3.3.1	GDP/unit of energy use	7.8	96 ○
3.3.2	Low-carbon energy use, %	60.5	9 ◆
3.3.3	ISO 14001 environment/bn PPP$ GDP	4.9	18
Market sophistication		**58.6**	**11**
4.1	**Credit**	**57.9**	**15**
4.1.1	Finance for startups and scaleups† ⏲	100.0	1 ●◆
4.1.2	Domestic credit to private sector, % GDP	93.1	24
4.1.3	Loans from microfinance institutions, % GDP	3.6	10
4.2	**Investment**	**37.4**	**13**
4.2.1	Market capitalization, % GDP	n/a	n/a
4.2.2	Venture capital (VC) received, deal count/bn PPP$ GDP	0.8	7
4.2.3	Late-stage VC deal count, % global VC	0.2	22
4.2.4	VC investors, deal count/bn PPP$ GDP	0.9	14
4.2.5	VC investor co-participation/bn PPP$ GDP	0.5	10
4.3	**Trade, diversification and market scale**	**80.6**	**26**
4.3.1	Applied tariff rate, weighted avg., %	1.3	24
4.3.2	Domestic industry diversification	96.4	9
4.3.3	Domestic market scale, bn PPP$	361.3	59 ○

		Score/ Value	Rank
Business sophistication		**55.3**	**12**
5.1	**Knowledge workers**	**59.6**	**12**
5.1.1	Knowledge-intensive employment, %	47.8	17
5.1.2	Females employed w/advanced degrees, %	27.0	16
5.1.3	Youth demographic dividend, %	25.7	114 ○
5.1.4	GERD performed by business, % GDP	2.1	10
5.1.5	GERD financed by business, %	58.1	16
5.2	**Innovation linkages**	**60.2**	**16**
5.2.1	Public research–industry co-publications, %	4.9	15
5.2.2	University–industry R&D collaboration†	64.8	14
5.2.3	University industry and international engagement, top 5*	66.5	28
5.2.4	State of cluster development†	69.7	35
5.2.5	Patent families/bn PPP$ GDP	6.7	5 ●◆
5.3	**Knowledge absorption**	**46.1**	**11**
5.3.1	Intellectual property payments, % total trade	0.9	45
5.3.2	High-tech imports, % total trade	7.9	72 ○
5.3.3	ICT services imports, % total trade	5.3	4 ●◆
5.3.4	FDI net inflows, % GDP	4.2	37
5.3.5	Research talent, % in businesses	59.8	15
Knowledge and technology outputs		**52.7**	**8**
6.1	**Knowledge creation**	**55.2**	**9**
6.1.1	Patents by origin/bn PPP$ GDP	11.3	6
6.1.2	PCT patents by inventor origin/bn PPP$ GDP	3.9	5 ◆
6.1.3	Utility models by origin/bn PPP$ GDP	0.7	25
6.1.4	Scientific and technical articles/bn PPP$ GDP	38.4	6 ◆
6.1.5	Citable documents H-index	42.3	20
6.2	**Knowledge impact**	**51.2**	**9**
6.2.1	Labor productivity growth, %	−0.8	117 ○◇
6.2.2	Unicorn valuation, % GDP	4.7	8 ◆
6.2.3	Software spending, % GDP	0.6	14
6.2.4	High-tech manufacturing, %	34.1	33
6.3	**Knowledge diffusion**	**51.6**	**10**
6.3.1	Intellectual property receipts, % total trade	2.7	9
6.3.2	Production and export complexity	78.8	18
6.3.3	High-tech exports, % total trade	4.9	43
6.3.4	ICT services exports, % total trade	9.0	7 ◆
6.3.5	ISO 9001 quality/bn PPP$ GDP	8.4	30
Creative outputs		**47.8**	**16**
7.1	**Intangible assets**	**45.7**	**22**
7.1.1	Intangible asset intensity, top 15, %	67.0	18
7.1.2	Trademarks by origin/bn PPP$ GDP	26.7	76 ○
7.1.3	Global brand value, top 5,000, % GDP	10.3	14
7.1.4	Industrial designs by origin/bn PPP$ GDP	2.2	35
7.2	**Creative goods and services**	**27.4**	**42** ◇
7.2.1	Cultural and creative services exports, % total trade	0.6	50 ○
7.2.2	National feature films/mn pop. 15–69	9.0	13
7.2.3	Entertainment and media market/th pop. 15–69	48.4	14
7.2.4	Creative goods exports, % total trade	0.5	63 ○
7.3	**Online creativity**	**72.4**	**7**
7.3.1	Top-level domains (TLDs)/th pop. 15–69	39.7	22
7.3.2	GitHub commits/mn pop. 15–69	98.8	3 ●◆
7.3.3	Mobile app creation/bn PPP$ GDP	78.8	9

Global Startup Ecosystem Index 2025



GSEI Country Ranking

Global Startup Ecosystem Index: Top Countries

Rank 2025	Country	Rank Change	Annual Ecosystem Growth	Total Score
1	United States	—	+18.2%	254.050
2	United Kingdom	—	+26.3%	70.743
3	Israel	—	+20.6%	62.167
4	Singapore	+1	+44.9%	54.682
5	Canada	–1	+18.8%	45.438
6	Sweden	—	+30.7%	35.311
7	Germany	—	+28.4%	33.159
8	France	—	+30.2%	32.417
9	Switzerland	+1	+31.8%	31.747
10	The Netherlands	–1	+26.2%	30.872

GSEI Country Ranking

Rank 2025	Country	Rank Change	Annual Ecosystem Growth	Total Score
11	Estonia	+1	+34.0%	30.722
12	Australia	−1	+24.8%	28.837
13	China	—	+45.9%	26.942
14	Spain	+1	+29.7%	23.170
15	Finland	−1	+26.0%	22.859
16	Ireland	+1	+33.5%	21.216
17	Denmark	+1	+31.3%	20.769
18	Japan	+3	+36.0%	18.104
19	Lithuania	−3	+7.5%	17.519
20	South Korea	—	+23.7%	16.581
21	United Arab Emirates	+2	+32.0%	16.358
22	India	−3	+16.8%	15.803
23	Belgium	+1	+29.1%	15.743
24	Norway	+1	+22.7%	14.349
25	Taiwan	−3	+8.4%	14.134
26	Austria	—	+21.0%	11.957
27	Brazil	—	+21.7%	11.898
28	Italy	—	+15.2%	11.254
29	Portugal	—	+15.6%	10.865
30	Czechia	+2	+17.3%	9.936
31	New Zealand	−1	+11.3%	9.488
32	Luxembourg	−1	+4.1%	8.870
33	Poland	+1	+10.6%	8.233
34	Russia	+1	+19.7%	8.101
35	Iceland	−2	−1.6%	7.976
36	Colombia	+2	+22.3%	7.811
37	Chile	+2	+10.3%	6.645
38	Saudi Arabia	+27	+236.8%	6.629
39	Türkiye	+1	+7.0%	6.379
40	Cyprus	+5	+28.2%	6.369
41	Bulgaria	−4	−0.8%	6.347
42	Ukraine	+4	+26.2%	6.196
43	Mexico	−2	+2.6%	6.021
44	Malaysia	−1	+14.2%	5.802
45	Indonesia	−9	−10.4%	5.735
46	Argentina	−4	+6.0%	5.394
47	Greece	+2	+12.1%	5.060
48	Romania	−4	−4.4%	4.802
49	Latvia	−2	−0.3%	4.765
50	Croatia	−2	−2.3%	4.460
51	Hungary	−1	+8.0%	4.239
52	South Africa	—	+19.5%	3.927
53	Thailand	+1	+12.7%	3.302
54	Armenia	+3	+22.8%	3.226
55	Vietnam	+1	+17.9%	3.179
56	Serbia	−3	−1.5%	3.147
57	Slovenia	−6	−20.2%	2.883
58	Kenya	+5	+33.5%	2.764
59	Malta	−4	−0.8%	2.728
60	Slovakia	+2	+23.9%	2.704
61	Uruguay	−3	−3.7%	2.506
62	Bahrain	+5	+40.1%	2.339
63	Liechtenstein	−2	+6.1%	2.326
64	The Philippines	−4	+0.6%	2.237
65	Egypt	+1	+22.0%	2.132
66	Nigeria	−2	+5.4%	2.081
67	Peru	+2	+20.2%	1.287
68	Sri Lanka	+8	+47.2%	1.253
69	Jordan	−1	−12.2%	1.199
70	Kazakhstan	+4	+21.3%	1.154
71	Georgia	−1	+8.9%	1.142
72	Pakistan	−1	+11.9%	1.097
73	Costa Rica	+2	+16.8%	1.065
74	Azerbaijan	+6	+24.5%	1.057
75	Cape Verde	+3	+22.8%	1.044
76	Qatar	+3	+13.6%	0.965
77	Lebanon	−4	0.0%	0.956
78	North Macedonia	−1	+1.5%	0.862
79	Bangladesh	+4	+0.4%	0.829
80	Mongolia	+1	−5.0%	0.807
81	Ghana	+7	+14.0%	0.800
82	Tunisia	+8	+15.3%	0.787
83	Albania	−11	−19.1%	0.785
84	Belarus	−2	−10.7%	0.746
85	Namibia	+2	+5.3%	0.743
86	Panama	−2	−10.3%	0.735
87	Jamaica	+2	+2.1%	0.711
88	Morocco	+4	+23.1%	0.687
89	Kuwait	+2	+7.1%	0.661
90	Moldova	−5	−18.3%	0.581
91	Bosnia and Herzegovina	+5	+27.8%	0.580
92	Senegal	−6	−18.8%	0.575
93	Ecuador	+1	+7.8%	0.575
94	Uganda	+1	-6.8%	0.468
95	Paraguay	+2	+3.1%	0.397
96	Rwanda	+2	+3.9%	0.371
97	Kosovo	+2	+4.9%	0.370
98	Uzbekistan	+12	+89.9%	0.358
99	Oman	new	—	0.349
100	Somalia	+1	+5.3%	0.330

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Source: Global Startup Ecosystem Index 2025

GSEI City Index

Global ranking 2025	Rank Change (from 2024)	City	Country	Annual Ecosystem Growth	Total Score
1	—	San Francisco	United States	+19.9%	852.643
2	—	New York	United States	+25.5%	315.515
3	—	London	United Kingdom	+29.8%	187.347
4	—	Los Angeles	United States	+14.1%	139.115
5	+1	Beijing	China	+25.2%	136.96
6	–1	Boston	United States	+17.1%	128.476
7	—	Shanghai	China	+38.4%	101.738
8	+2	Paris	France	+34.6%	81.825
9	—	Tel Aviv-Yafo	Israel	+24.0%	78.972
10	–2	Bangalore	India	+13.8%	77.567
11	—	New Delhi	India	+15.5%	64.328
12	+4	Singapore City	Singapore	+50.5%	62.224
13	+1	Tokyo	Japan	+24.2%	61.365
14	–1	Berlin	Germany	+20.7%	60.266
15	–3	Seattle	United States	+11.0%	57.799
16	+1	Austin–Round Rock Area	United States	+24.1%	51.211
17	+1	Shenzhen	China	+23.2%	48.722
18	+2	Mumbai	India	+31.5%	48.451
19	–4	Chicago	United States	+13.7%	48.036
20	+1	Seoul	South Korea	+30.3%	47.983
21	+1	Toronto	Canada	+30.6%	47.968
22	–3	Washington	United States	+17.5%	44.62
23	—	Sao Paulo	Brazil	+15.6%	42.361
24	+2	Stockholm	Sweden	+32.5%	42.303
25	–1	San Diego	United States	+19.4%	40.698

Global ranking 2025	Rank Change (from 2024)	City	Country	Annual Ecosystem Growth	Total Score
26	+2	Amsterdam	The Netherlands	+31.7%	39.088
27	–2	Dallas	United States	+5.2%	35.516
28	+2	Miami	United States	+28.5%	34.896
29	+4	Hangzhou	China	+39.2%	32.445
30	–3	Jakarta	Indonesia	+5.9%	32.251
31	+5	Sydney	Australia	+42.7%	31.724
32	–3	Atlanta	United States	+6.7%	31.493
33	+5	Barcelona	Spain	+40.4%	30.86
34	–2	Moscow	Russia	+28.1%	30.262
35	–4	Denver	United States	+11.8%	29.051
36	+3	Munich	Germany	+28.4%	28.184
37	—	Hong Kong	China	+26.6%	27.901
38	–3	Philadelphia	United States	+16.6%	25.988
39	+1	Vancouver	Canada	+22.1%	25.023
40	–6	Salt Lake City	United States	+3.0%	23.616
41	+11	Guangzhou	China	+55.0%	22.846
42	+2	Melbourne	Australia	+22.8%	21.579
43	+4	Helsinki	Finland	+23.6%	20.576
44	+6	Dubai	United Arab Emirates	+33.4%	20.495
45	–4	Raleigh Durham	United States	–0.1%	20.459
46	–3	Montreal	Canada	+13.4%	20.123
47	–5	Minneapolis	United States	+7.4%	19.287
48	+8	Copenhagen	Denmark	+36.4%	18.542
49	+6	Tallinn	Estonia	+35.7%	18.478
50	+1	Istanbul	Türkiye	+21.7%	18.351

Source: Global Startup Ecosystem Index 2025

Finland and Estonia

Building on this momentum, the Estonian public sector has played a key role in shaping the country's startup identity through bold and highly effective marketing initiatives—the likes of which are rarely seen elsewhere in the world. Notable examples include globally copied innovations such as e-Residency, Nomad Visas, and the positioning of companies as fully digitized.

Estonia's small population also means that startups compete fiercely for talent, and the public sector bears the responsibility of providing the booming startup ecosystem with a steady influx of foreign workers. A significant portion of the Estonian workforce is employed in startups, with top startups generating the majority of employment in the sector—highlighting the ongoing need to attract international talent. The Work in Estonia Program, launched by the government, aims to bring in IT specialists as well as talent in the Natural and Exact Sciences. Over the past five years, Estonia has significantly boosted its attractiveness to foreigners, effectively doubling its international talent pool.

Country Insights

- Finland drops to 15th place, continuing its decline from last year. With a growth rate that is less than 26%, it has the lowest growth rate among the top 10 European countries.
- Due to its slower growth compared to regional peers, the country also slips to 7th in the EU, distancing itself from the top 5 it briefly entered in 2023.
- Finland remains a strong second-tier nation in the Nordic region, holding its runner-up position.
- Helsinki's total score is now seven times larger than Oulu's (2nd), underscoring the increased centralization of Finland's startup ecosystem in the capital. This gap has widened since 2024.
- Of Finland's 9 cities in the global top 1,000, only Helsinki is ranked in the global top 50.
- Finland's best industry is Foodtech where it stands at 4th globally.

Source: Global Startup Ecosystem Index 2025

Finland City Scoring

City Insights

- Helsinki (43rd globally) rises 4 spots, regaining its 2023 position after last year's decline.
- Helsinki maintains its position as 7th in the EU for the third year in a row.
- As second-tier cities, Oulu and Tampere both see a global decline for the second year in a row. Oulu has fallen out of the global top 200, and Tampere is moving further away from the global top 300 it joined in 2023.
- Finnish cities in the third tier, from Turku to Kuopio, show positive momentum. Kuopio climbs one spot nationally to 7th.
- Turku (4th nationally) leads the way with the largest climb, jumping 116 spots to rank 400th globally.
- Turku has the biggest ecosystem growth rate of all Finnish cities by more than 105%.
- Helsinki ranks 14th worldwide for the Foodtech industry.

National Rank & Change (from 2024)	City	Global Rank & Change (from 2024)	Total Score	Ecosystem Growth (Annual)	Top Industry Global Rank
1 –	Helsinki	43 +4	20.576	+23.6%	Foodtech 14
2 –	Oulu	207 –37	2.857	–21.5%	Health Care 41
3 –	Tampere	332 –10	1.271	+10.7%	Hardware 99
4 –	Turku	400 +116	0.945	+105.2%	–
5 –	Jyvaskyla	534 +96	0.502	+66.3%	–
6 –	Joensuu	746 +14	0.251	+22.7%	–
7 +1	Kuopio	754 +94	0.243	+45.8%	–
8 new	Vaasa	899 new	0.171	New	–
9 –2	Salo	955 –182	0.146	–26.9%	–
10 –1	Lappeenranta	1018 +43	0.131	+34.1%	–

Source: Global Startup Ecosystem Index 2025

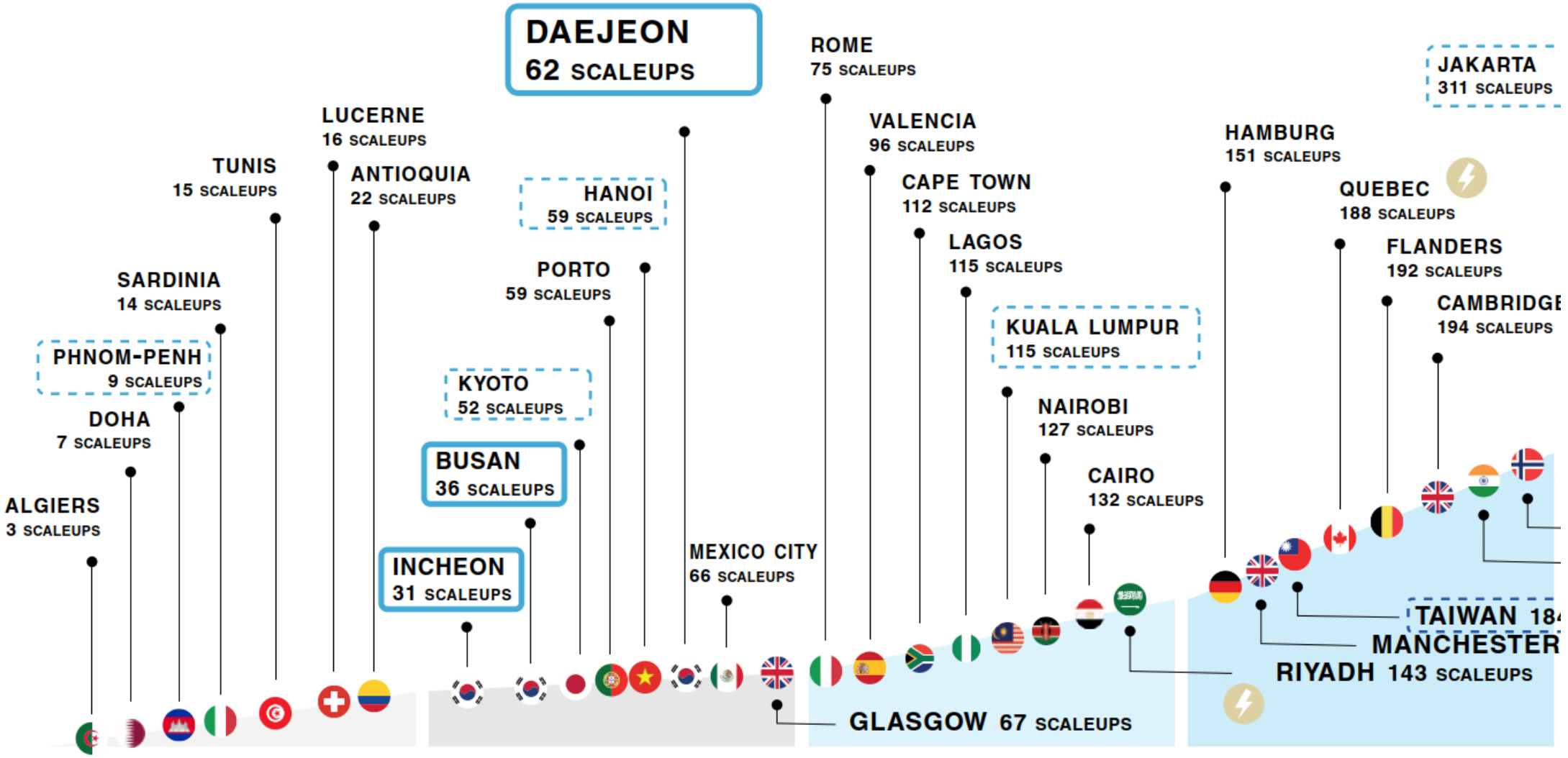
GSEI Methodology

- Number of startups
- Number of investors
- Number of coworking spaces
- Number of accelerators
- Number of startup-related meetups

- Total accumulated private sector startup investment
- Total accumulated number of startup sector employees
- Number and size of unicorns and exits above US$1B
- The traction of startups in each ecosystem (including traffic, domain authority, and customer base)
- R&D centers of multinational technology companies (e.g. Alphabet, Microsoft, Meta, Cisco)
- Branches of multinational companies and brands (e.g. WeWork spaces)
- Total accumulated value of exits with a valuation below US$1B
- Number and size of global startup events and conferences
- Presence and impact of Pantheon members
- Presence and impact of Global Startup Influencers
- Number of startups accepted by top global accelerators per ecosystem
- Number and market capitalization of listed companies in technology sectors

Source: Global Startup Ecosystem Index 2025

Scaleup Hub Comparison



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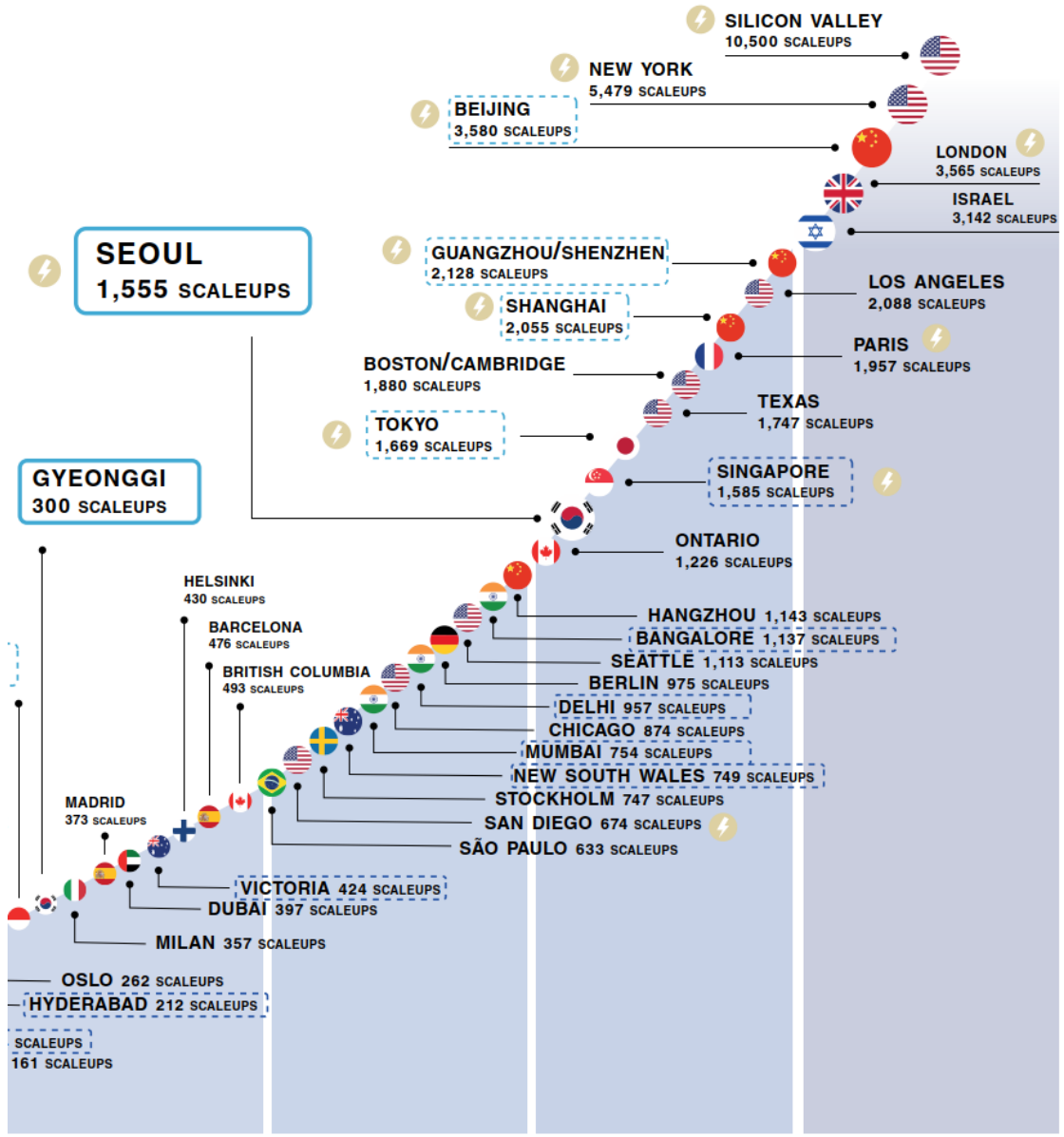
Source: Mind the Bridge

Scaleup Hub Comparison



Source: Mind the Bridge

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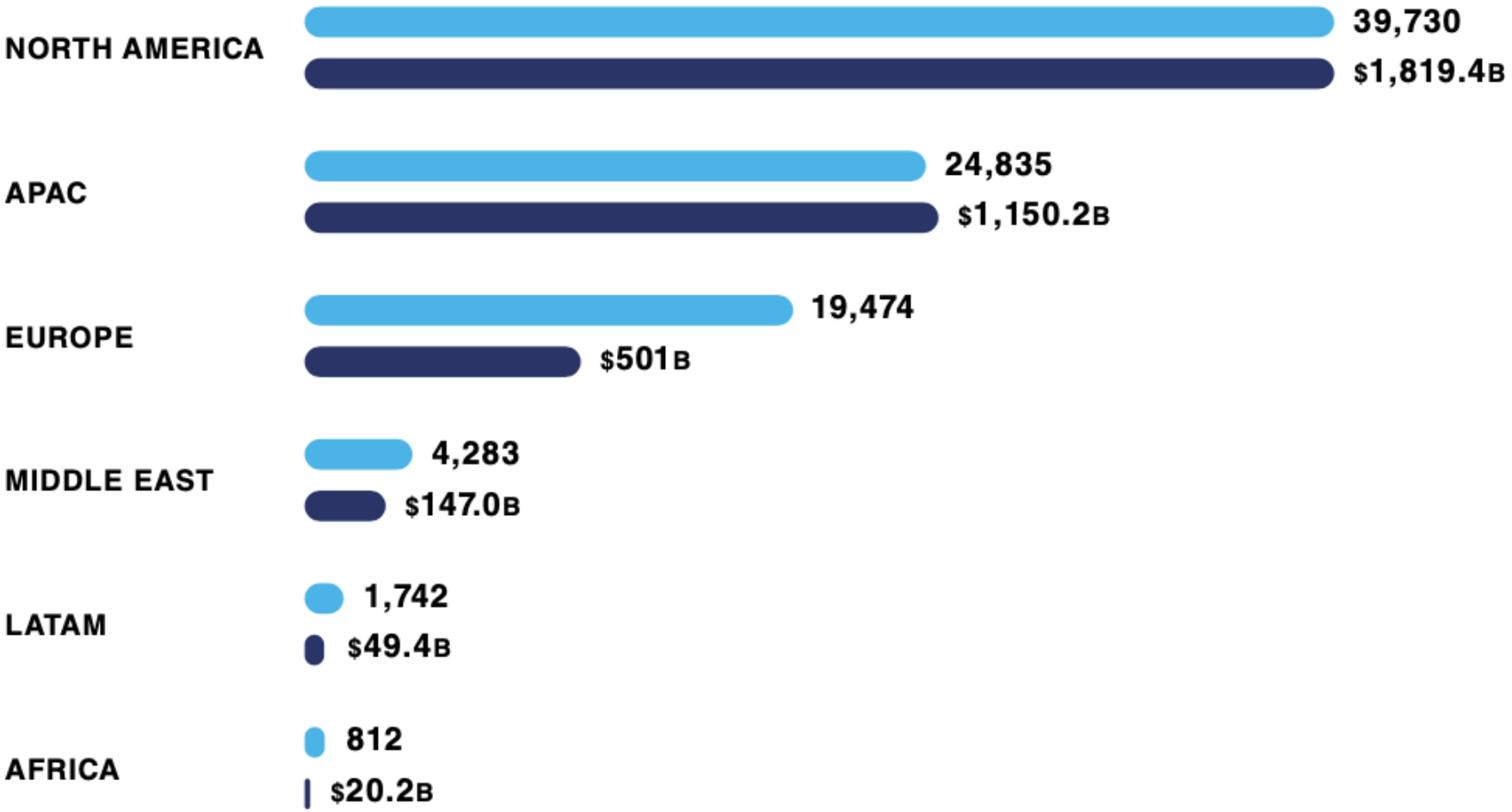
SCALEUP | STAR
EARLY | LATE | NOVA | SUPERNOVA

Worldwide Scaleup Comparison



Source: Mind the Bridge

Global Scaleup Leaders

USA	CHINA	U.K.	INDIA	ISRAEL	FRANCE	GERMANY	JAPAN	CANADA	SOUTH KOREA
37,305 SCALEUPS	11,747 SCALEUPS	5,240 SCALEUPS	3,781 SCALEUPS	3,142 SCALEUPS	3,019 SCALEUPS	2,184 SCALEUPS	2,074 SCALEUPS	2,065 SCALEUPS	1,764 SCALEUPS
3,223 SCALERS	949 SCALERS	267 SCALERS	284 SCALERS	280 SCALERS	131 SCALERS	142 SCALERS	86 SCALERS	114 SCALERS	76 SCALERS
223 SUPER SCALERS	105 SUPER SCALERS	19 SUPER SCALERS	28 SUPER SCALERS	8 SUPER SCALERS	4 SUPER SCALERS	10 SUPER SCALERS	2 SUPER SCALERS	0 SUPER SCALERS	8 SUPER SCALERS
$1,769.1B CAP. RAISED	$641.7B CAP. RAISED	$154.8B CAP. RAISED	$207.5B CAP. RAISED	$121.9B CAP. RAISED	$66.9B CAP. RAISED	$78.8B CAP. RAISED	$42.2B CAP. RAISED	$50.3B CAP. RAISED	$62.0B CAP. RAISED
11.1 SCALEUPS/100K PPL.	0.8 SCALEUPS/100K PPL.	7.7 SCALEUPS/100K PPL.	0.3 SCALEUPS/100K PPL.	31.7 SCALEUPS/100K PPL.	4.6 SCALEUPS/100K PPL.	2.6 SCALEUPS/100K PPL.	1.7 SCALEUPS/100K PPL.	5.0 SCALEUPS/100K PPL.	3.4 SCALEUPS/100K PPL.
6.1% CAP. RAISED/GDP	1.7% CAP. RAISED/GDP	3.6% CAP. RAISED/GDP	1.3% CAP. RAISED/GDP	22.5% CAP. RAISED/GDP	1.5% CAP. RAISED/GDP	1.3% CAP. RAISED/GDP	0.6% CAP. RAISED/GDP	1.9% CAP. RAISED/GDP	1.9% CAP. RAISED/GDP

Global Scaleup Leaders

SINGAPORE	AUSTRALIA	SWEDEN	SPAIN	BRAZIL	SWITZERLAND	NETHERLANDS	ITALY	FINLAND	DENMARK
1,587 SCALEUPS	1,512 SCALEUPS	1,156 SCALEUPS	1,134 SCALEUPS	931 SCALEUPS	921 SCALEUPS	872 SCALEUPS	711 SCALEUPS	549 SCALEUPS	489 SCALEUPS
96 SCALERS	65 SCALERS	47 SCALERS	37 SCALERS	68 SCALERS	44 SCALERS	39 SCALERS	19 SCALERS	21 SCALERS	17 SCALERS
8 SUPER SCALERS	0 SUPER SCALERS	4 SUPER SCALERS	1 SUPER SCALERS	3 SUPER SCALERS	0 SUPER SCALERS	4 SUPER SCALERS	0 SUPER SCALERS	0 SUPER SCALERS	2 SUPER SCALERS
$76.6B CAP. RAISED	$33.9B CAP. RAISED	$41.6B CAP. RAISED	$20.8B CAP. RAISED	$33.1B CAP. RAISED	$19.4B CAP. RAISED	$23.2B CAP. RAISED	$9.6B CAP. RAISED	$10.2B CAP. RAISED	$12.6B CAP. RAISED
26.9 SCALEUPS/100K PPL.	5.5 SCALEUPS/100K PPL.	10.9 SCALEUPS/100K PPL.	2.3 SCALEUPS/100K PPL.	0.4 SCALEUPS/100K PPL.	10.3 SCALEUPS/100K PPL.	4.9 SCALEUPS/100K PPL.	1.2 SCALEUPS/100K PPL.	9.8 SCALEUPS/100K PPL.	8.2 SCALEUPS/100K PPL.
8.7% CAP. RAISED/GDP	1.8% CAP. RAISED/GDP	5.4% CAP. RAISED/GDP	0.8% CAP. RAISED/GDP	0.7% CAP. RAISED/GDP	2.3% CAP. RAISED/GDP	1.6% CAP. RAISED/GDP	0.3% CAP. RAISED/GDP	2.8% CAP. RAISED/GDP	2.5% CAP. RAISED/GDP

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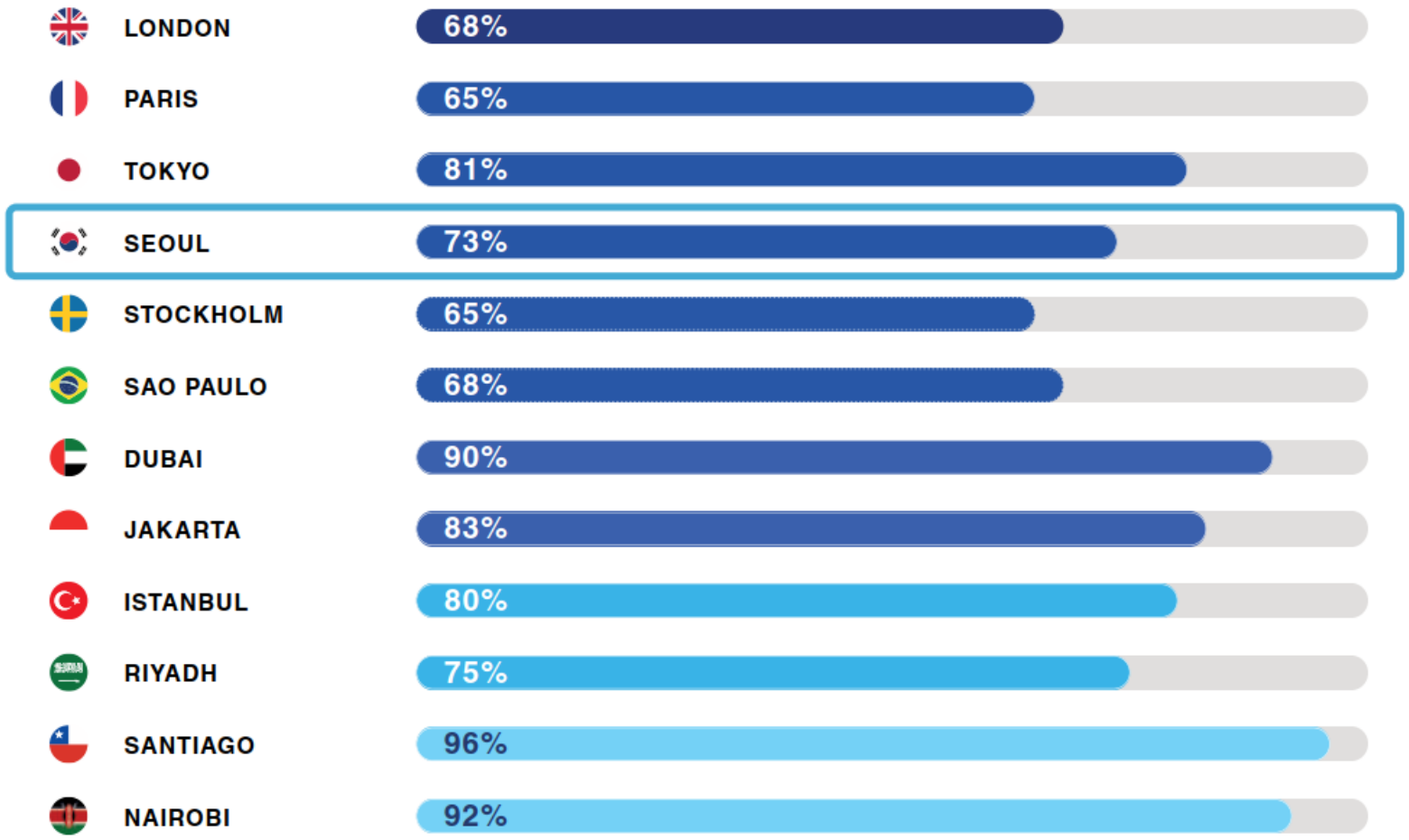
Source: Mind the Bridge

Concentration of Scaleups in the Main City



Helsinki: 78%

Source: Mind the Bridge

Unicorns Per Country, October 2025

Table of the number of unicorn startups by country as of October, 2025

	Country	Number of unicorns	Number of unicorns per million people
1	USA	1050	2.29
2	China	343	0.20
3	India	124	0.09
4	UK	94	1.35
5	Germany	47	0.55
6	Israel	42	4.20
7	South Korea	33	0.40
8	Singapore	33	3.69
9	France	31	0.49
10	Canada	30	0.75
11	Brazil	25	0.09
12	Netherlands	15	0.60
13	Australia	12	0.43
14	Japan	11	0.13
15	Indonesia	10	0.03
16	Hong Kong	10	1.71
17	Mexico	10	0.08
18	Estonia	10	7.30
19	Ireland	9	1.89
20	Switzerland	9	1.01
21	Saudi Arabia	8	0.25
22	Sweden	8	0.76
23	UAE	6	0.63
24	Turkey	5	0.06
25	Finland	5	1.61
26	Norway	5	0.91
27	Nigeria	4	0.01
28	Vietnam	4	0.04
29	Spain	4	0.08
30	Luxembourg	4	0.03
31	Thailand	3	0.04
32	Egypt	3	0.03
33	Russia	3	0.02
34	Philippines	3	0.02
35	Cayman Islands	3	0.01
36	Belgium	3	0.26
37	Taiwan	2	0.02
38	South Africa	2	0.01
39	Bangladesh	2	0.01
40	Malaysia	2	0.01

Unicorn Density, October 2025

	Country	Number of unicorns	Number of unicorns per million people
1	Liechtenstein	1	25
2	Estonia	10	7.30
3	Israel	42	4.20
4	Singapore	33	3.69
5	USA	1050	2.29
6	Ireland	9	1.89
7	Hong Kong	10	1.71
8	Finland	5	1.61
9	UK	94	1.35
10	Switzerland	9	1.01
11	Norway	5	0.91
12	Sweden	8	0.76
13	Canada	30	0.75
14	Lithuania	2	0.70
15	UAE	6	0.63
16	Netherlands	15	0.60
17	Germany	47	0.55
18	Latvia	1	0.53
19	Denmark	2	0.50
20	France	31	0.49

Source: https://en.wikipedia.org/wiki/List_of_unicorn_startup_companies

Observations

- The greater the productivity potential of startup activity, the stronger its geographical concentration
- Finland appears to exhibit a slightly stronger capacity for innovation than for high-end startup creation
- Finland's concentration of scale-up activity in the Helsinki region is unusually high
- Some concern about Helsinki's relative strength in attracting scaleup and unicorn activity, particularly as compared to Estonia – are there lessons to learn?

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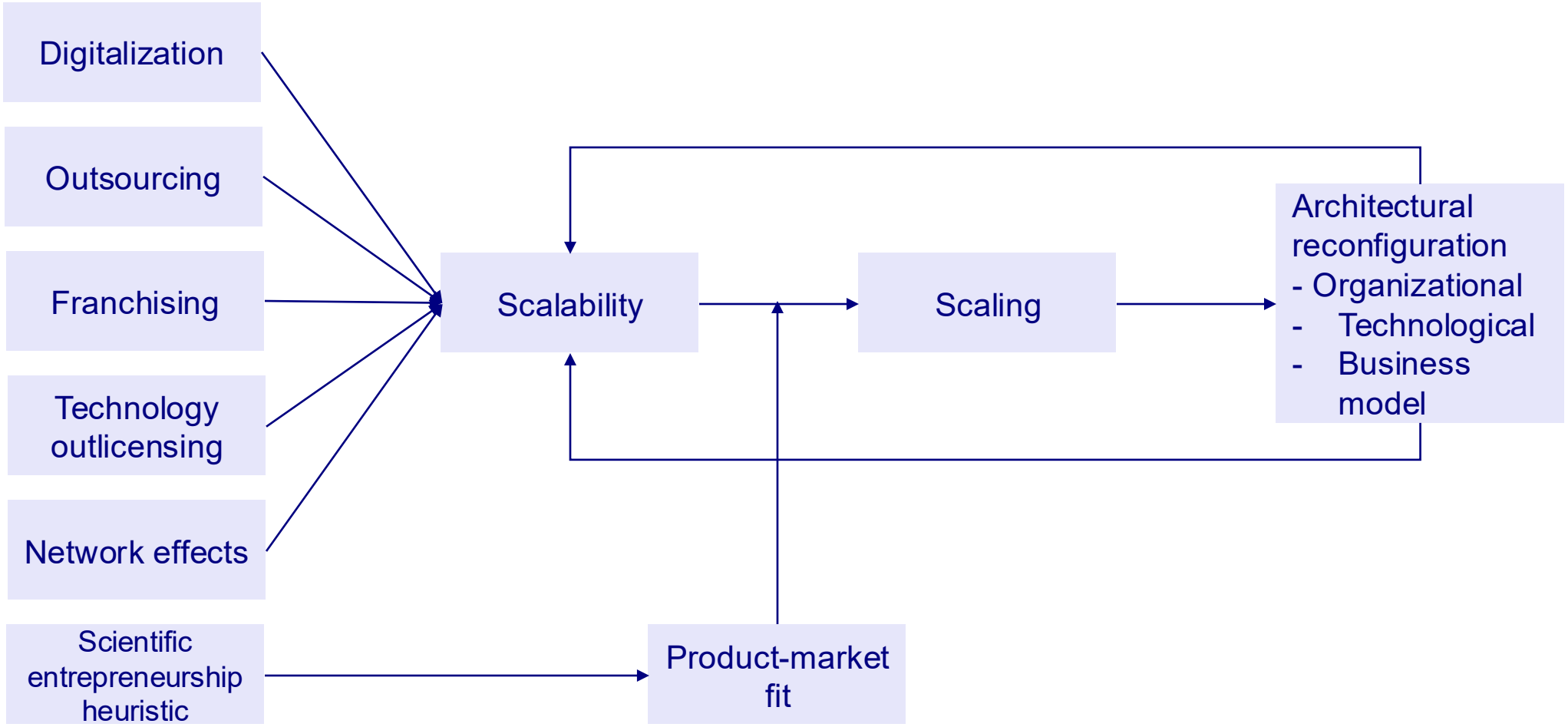
Thank you

High-Growth Entrepreneurship, Regional Agglomerations, and Policy Challenges
27.11.2025

Scalability Framework



Scaling Canvas

Scaling partnerships

Partnerships to leverage inherently 'scale-free' digital resources, notably:

1 Cloud resources
2 Digitalised services (e.g., payment gateways, digital marketing APIs, social media APIs, machine translation APIs, fraud detection APIs)
3 Physical outsourced services (e.g., shipping carrier APIs, inventory management APIs, outsourced manufacturing)

Minimise non-scalable activities

1 Identify your non-scalable activities
2 For non-scalable activities, consider:
2a Can you automate them?
2b Can you migrate them to the cloud?
2c Can you outsource them?

Value proposition scalability

1 Can you digitalise your VP?
2 Can you convert your offering into a platform?
3 Can you drive and harness network effects (direct, indirect, data)?
4 Can you convert your VP into a franchise?
5 Can you license out your VP?

Customer interactions

1 Can you automate your customer interactions (e.g., an app)?
2 Can you automate your customer data collection and analysis?
3 Can you outsource or automate your customer support?
4 Can you automate customer acquisition?

resources and cloud infrastructure

1 Can you outsource non-scalable resources?
2 Can you adopt a cloud-native strategy by digitalising your key activities, resources, and value proposition and moving them to the cloud?
3 Can you identify a cloud provider able to provide flexible and resilient capacity optimisation in different geographies?
4 Can you adopt an Infrastructure as Code (IaC) strategy?
5 Can you build an AIML capability to drive data network effects?
6 Can you implement a DevOps strategy in your business?

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WICKED LABS

Envisioning, Orchestrating, and Accelerating Desirable Futures

Erkko Autio, Co-Founder
Cristobal Garcia-Herrera, Co-Founder

November 2025

BASED IN THE WORLD'S 2ND RANKED UNIVERSITY

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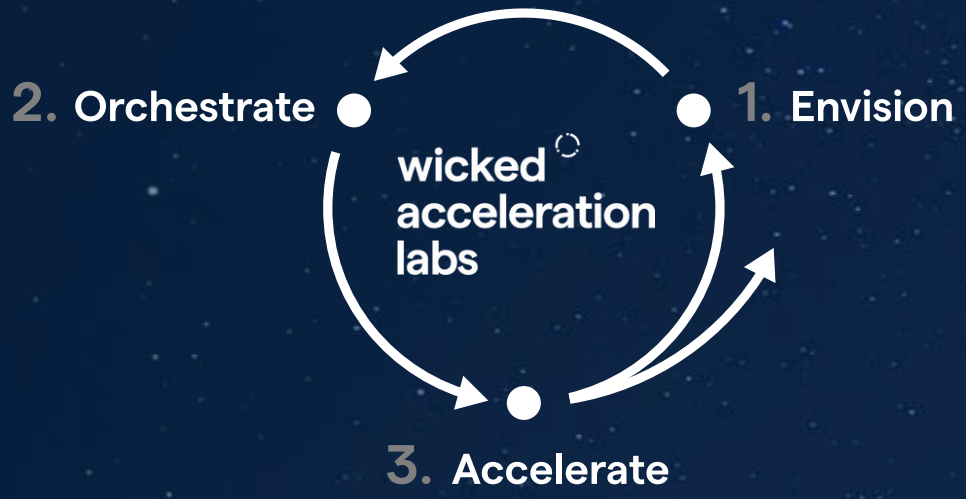

Wicked Acceleration Labs is a pioneering Lab co-founded by Imperial College and Royal College of Art (RCA) academics dedicated to tackling the most pressing systemic challenges facing our world today.

We operate at the intersection of academia, industry, civil society, and policy, where complex, multi-stakeholder scenarios require novel tools, frameworks and approaches that extend current dominant entrepreneurial innovation heuristics.

Our mission is to envision, orchestrate, and accelerate desirable futures by addressing these intricate, systems-level challenges.

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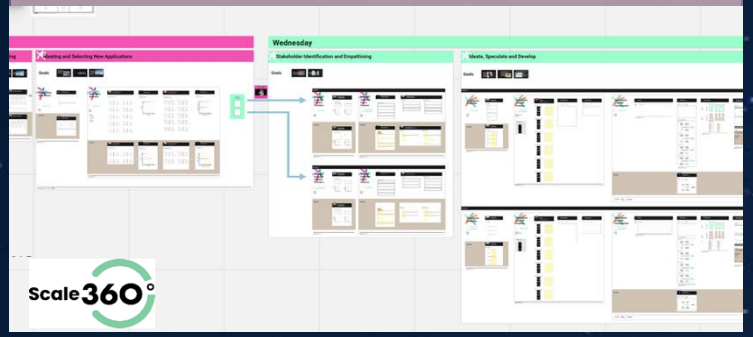
WHAT WE DO

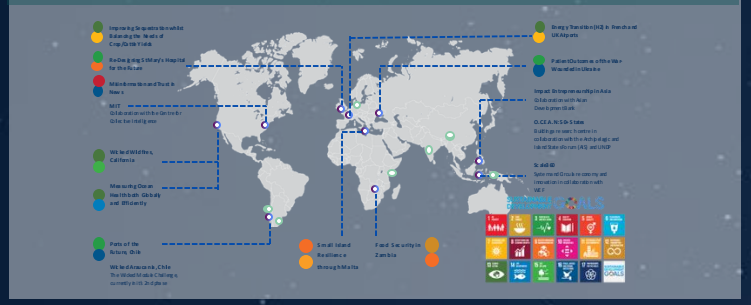
Digitally-enhanced and AI-powered learning environments, Tools & Playbooks



Address Wicked Challenges through advanced yet applied Research

Immersive Learning Experiences at South Kensington and White City campuses, London, UK

Global Presence with Teaching, Research, Projects and Outreach



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Executive Roundtables, Symposia, Executive Education Programmes

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LEARNING APPROACH

The Wicked Process

1 **Stage 1: Define and Map the Challenge**

Fast Paced, Immersive 5 weeks

2 **Stage 2: Test the Challenge**

Real World Problems

3 **Stage 3: Experiment**

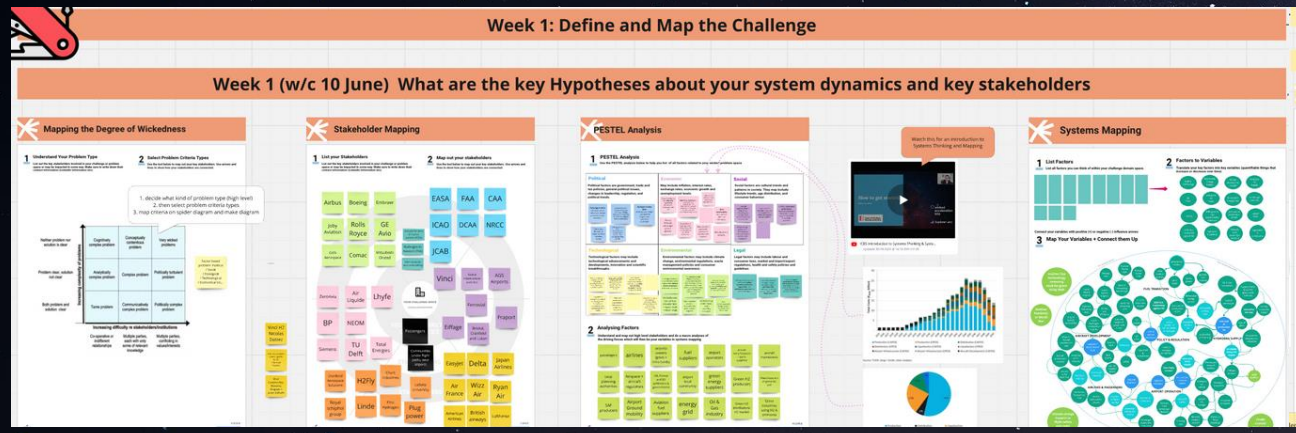
Advanced Systems and Stakeholder Analysis

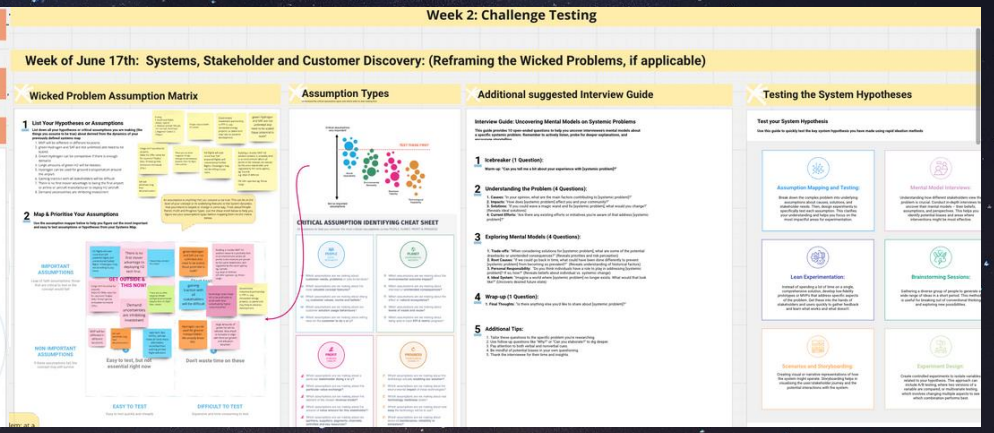
4 **Stage 4: Deliver Value**

Supported by the Swiss Army Knife Toolkit

5 **Stage 5: Validate, Reflect and Repeat**

Test, Validate and Invest





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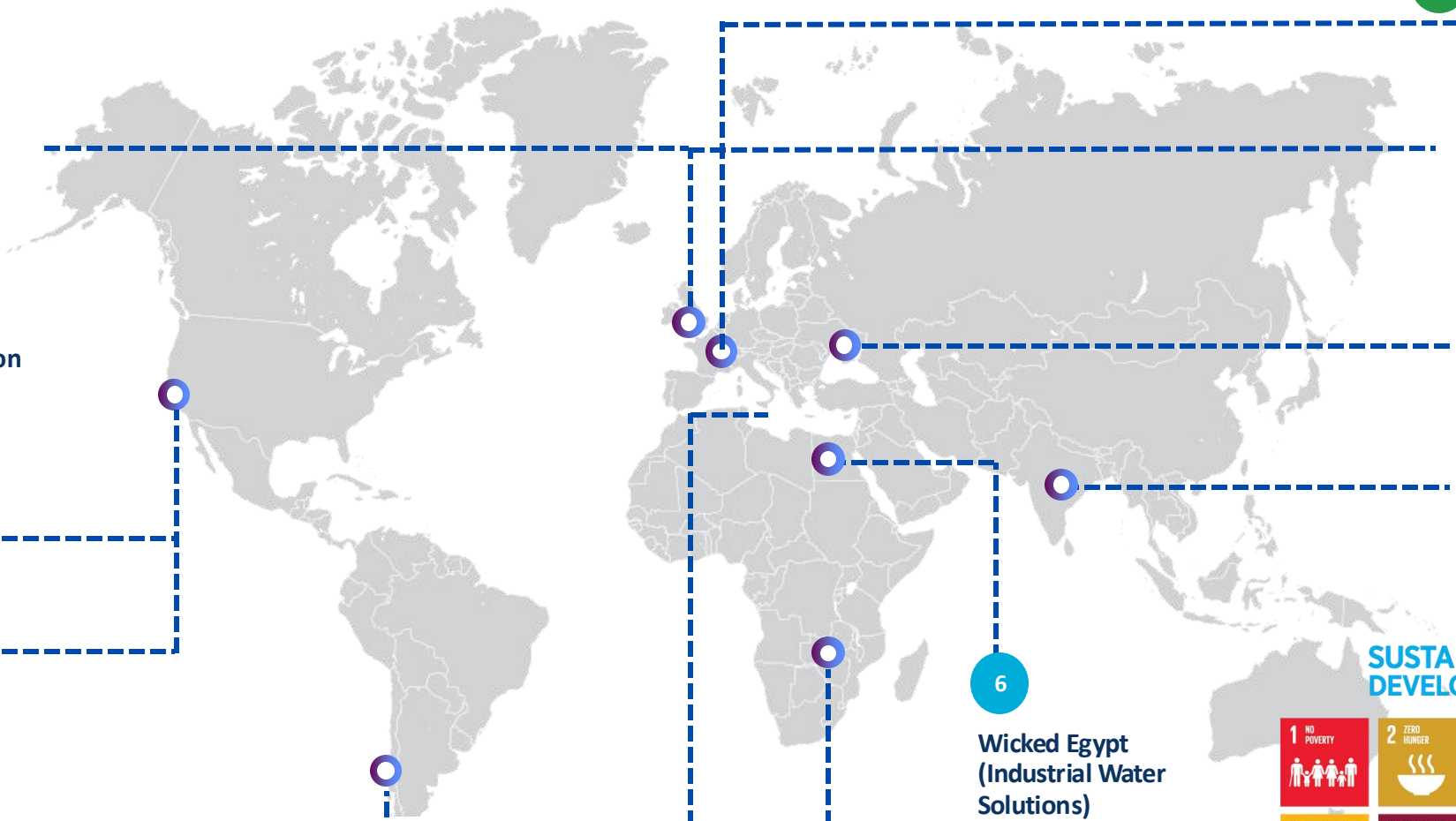
OUR CURRENT PORTFOLIO OF CURATED WICKED CHALLENGES



13 Carbon Sequestration whilst Balancing the 7 Needs of Crop/Cattle Yields

3 Re-Designing St Mary's 9 Hospital for the Future

4 Gen AI & Misinformation 16

13 Wicked Wildfires, California 15

13 Measuring Ocean Health both 14 Globally and Efficiently

3 The Valparaiso Coastal Region 16 Challenges

3 Home Remote Care in Navarra (Spain)

7 13 Energy Transition (H2) in French and UK Airports

3 16 Patient Outcomes of the War-Wounded in Ukraine

3 Fat Loss Management in India

6 Wicked Egypt (Industrial Water Solutions)

9 Islands States 11 Resilience through the lens of Malta

Food Security in Zambia 12 9

SUSTAINABLE DEVELOPMENT GOALS

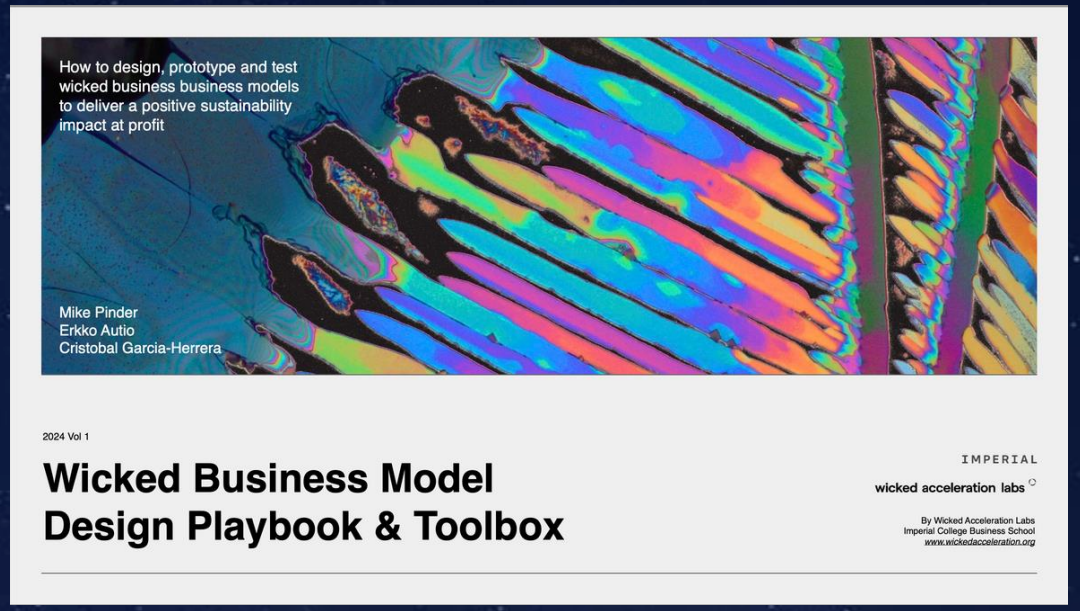
THE WICKED BUSINESS MODEL PLAYBOOK

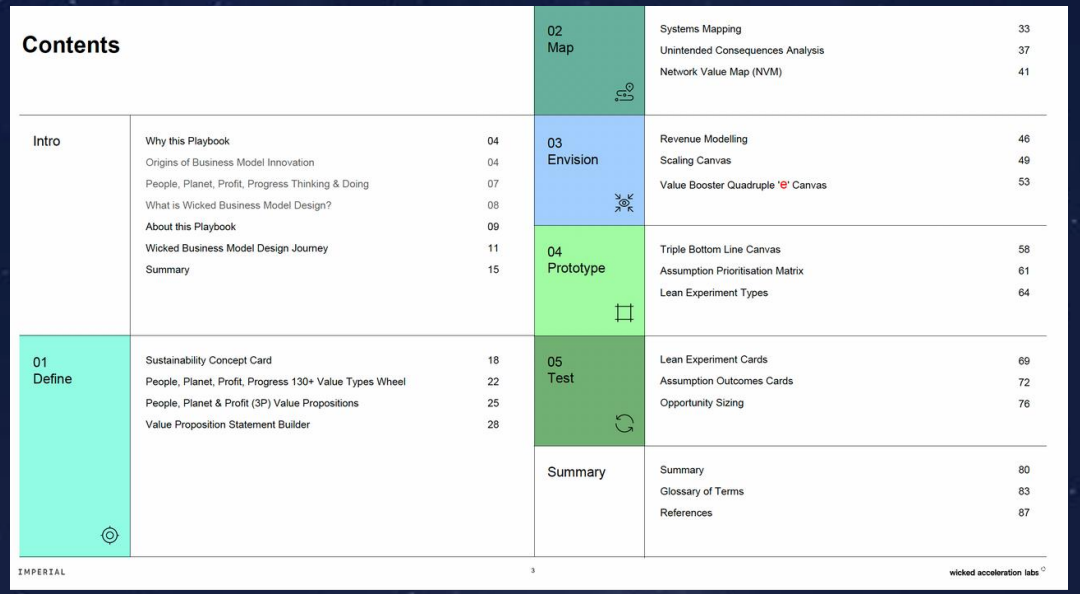
What We Do

The world faces urgent challenges that demand new business models focused on regenerative impact alongside financial sustainability.

Traditional tools fall short, so we developed a "Wicked Business Model Design" playbook, equipping companies to create profitable, impactful models.

The playbook includes extended design frameworks and methods that help turn social and environmental impact missions from costly add-ons into profit drivers. Using a "4P" framework—People, Planet, Profit, and Progress—it guides organisations in developing regenerative business models that create value across multiple dimensions.





DEEPTECH PLAYBOOK

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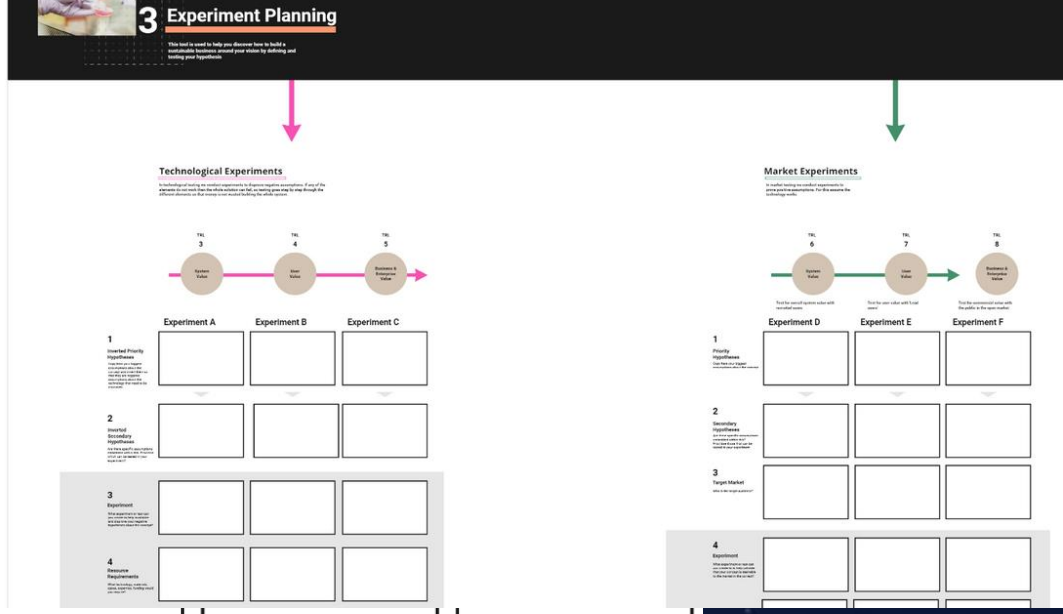
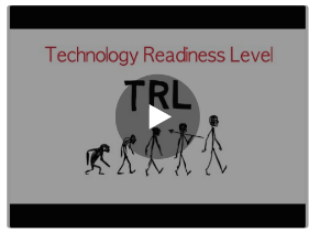


TRL Exploration

Explore the range of TRL scales and consider which scale(s) you should adopt.



Watch this video on TRLs (3 mins approx)!

Scale Type	TRL 1	TRL 2			
European Union This is an industry standard for Technology Readiness Levels that applies broadly in many contexts	Basic principles observed	Technology concept formulated	Experimental proof of concept	Technology validated in lab	Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
NASA This is an industry standard for Technology Readiness Levels that applies broadly in many contexts but was developed specifically for space technologies	Basic principles observed and reported	Technology concept and/or application formulated	Analytical and experimental critical function and/or characteristic proof-of concept	Component and/or breadboard validation in laboratory environment	Component and/or breadboard validation in relevant environment
System Complexity This scale illustrates how much 'real world' complexity should be included at each of these Technology Readiness Levels			A single element of technology. The lowest sub-system that provides sufficient granularity to identify technical risks and opportunities.	Integrated components that provide a representation of a system/subsystem and that can be used to determine concept feasibility and to develop technical data. Typically configured for laboratory use to demonstrate the technical principles of immediate interest. May resemble final system/subsystem in function only.	
Environment This scale illustrates how much 'real world' environment should be included at each of these Technology Readiness Levels	Desk or Lab		The normal environment where the technology or product is developed, usually not related to the environment where it will be used		Testing environment in a lab or other cor the most important and most stressing

ACCELERATING DEEP SCIENCE AND TECH

BioBeacon Technologies

SEPSISENSE

Early detection when every second counts.

Group 3: Tanya Bansal, George Dear, David Driskell, Pourush Sachdeva, Shivani Saluja, Bogosi Shashane.

Technology: Skin Cancer Detection

- Laser-induced Breakdown Spectroscopy (LIBS) with laser wavelengths of 355nm (smallest wavelength used in cancer detection, leads to better resolution)
- High intensity laser pulse sent to skin, creating small plasma
- Light from plasma is received and analyzed
- The light is compared with the light profile of a cancerous tissue
- The result is uploaded to a cloud service and AI platform, and after cross checking, preliminary report will be generated up to 110x faster

Imperial College Business School

NH3-RGY

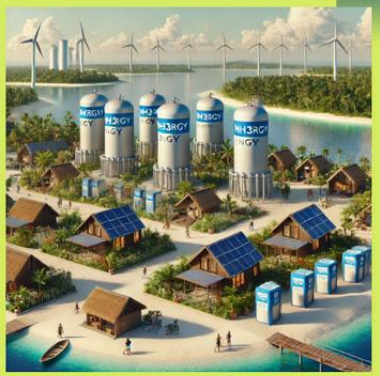
AMMONIA-POWERED MICROGRIDS

Solution

- The combustion of ammonia with hydrogen peroxide can be used to generate electricity by using the heat produced from the reaction.
- Microgrids are small-scale, localised energy systems that can operate separately from national grids.

Impact

- ***"An electricity network cannot be stable with over 80% of renewables with the current technologies."*** - **Dimitrios Kyritsis**
- In remote developments where nuclear or hydroelectric power are not possible, Ammonia microgrids provide the most-viable non-carbon pollution fuel source as other alternatives like hydrogen are hard to transport and store.



wicked acceleration labs | IMPERIAL BUSINESS SCHOOL | IMPERIAL

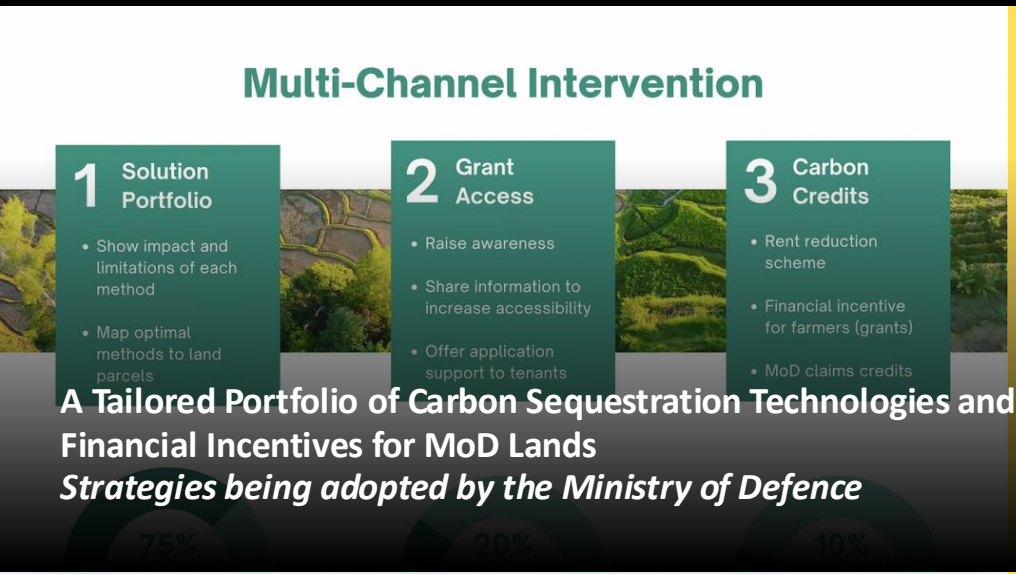
WICKED PROJECT OUTCOMES

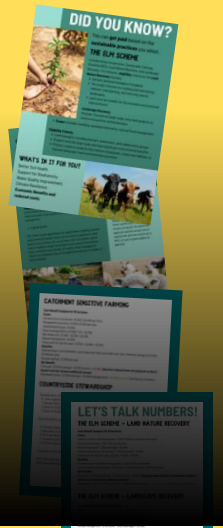
Xpand is Strava-like Community App for Amputees to **Share**, **Learn**, **Engage**, **Track**, & **Empower** each other during their ongoing rehabilitation journey.

Xpand generates data on the backend on patient behaviour, activity, pain levels and overall progress that can be shared (owned by patients) to help enrich healthcare professionals' understanding of patient outcomes, aswell as prompt and navigate them to healthcare facilities if needed.

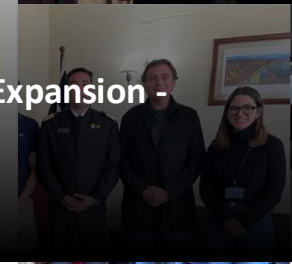
Xpand: A Digital Platform for Peer Support and Better Rehabilitation Outcomes - Ukraine
Initial Funding Stage

Improving Milk Storage and Collection Infrastructure -Zambia
Funding and Development Stage





A Tailored Portfolio of Carbon Sequestration Technologies and Financial Incentives for MoD Lands
Strategies being adopted by the Ministry of Defence



A Skilled Workforce and Economic Growth Aligned with Port Expansion - San Antonio, Chile
Project Development with Partners

THE ZAMBIAN SUCCESS STORY

Addressing Food Insecurity in Zambia

The Challenge:

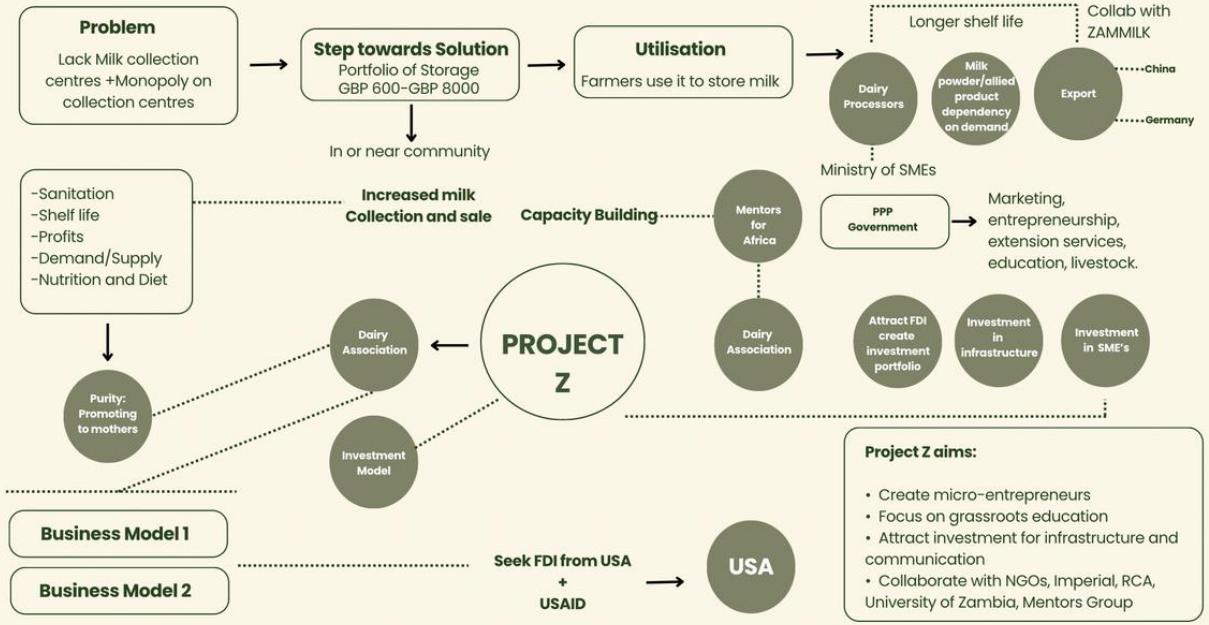
Zambia's small-scale dairy farmers face severe food insecurity due to inadequate milk storage and collection infrastructure, as well as limited knowledge of sustainable farming practices. These barriers lead to high milk wastage and restrict farmers' access to the formal market.

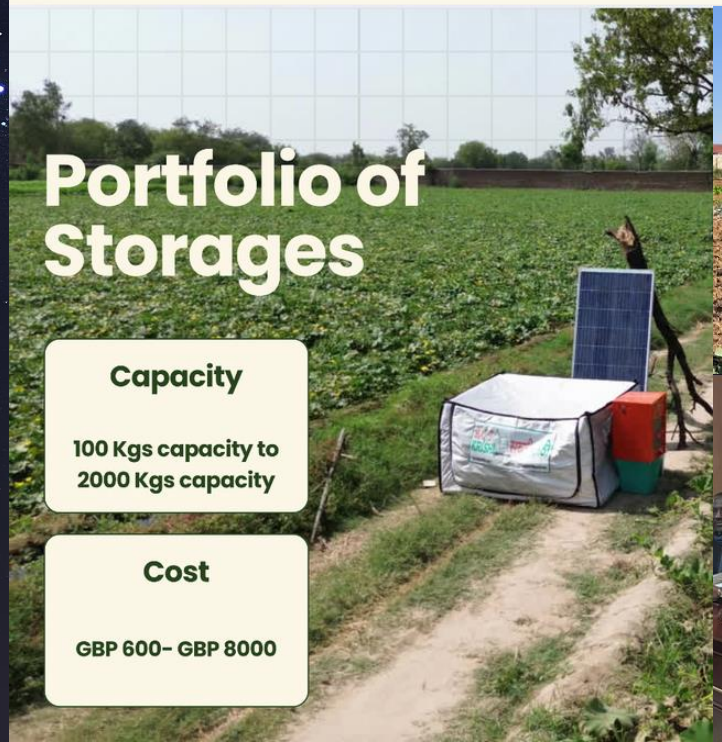
The Process:

The team and partners travelled to Zambia to gain a firsthand understanding of the challenges, conducting over 50 stakeholder interviews with farmers, key government officials, and community leaders. These engagements provided actionable insights that shaped the project's strategies for effective, community-driven solutions.

The Outcome:

The team developed a scalable model for mobile milk collection and storage centres, along with educational programmes for sustainable farming. **Now, in collaboration with sponsors, they are seeking funding to implement this business model with the support of the Zambian government and local organisations.**





EXTENDED WICKED TEAM

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Co-founder

DR CRISTOBAL GARCIA-HERRERA
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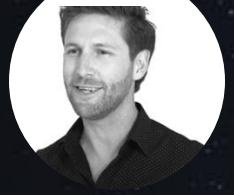
Co-founder



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