

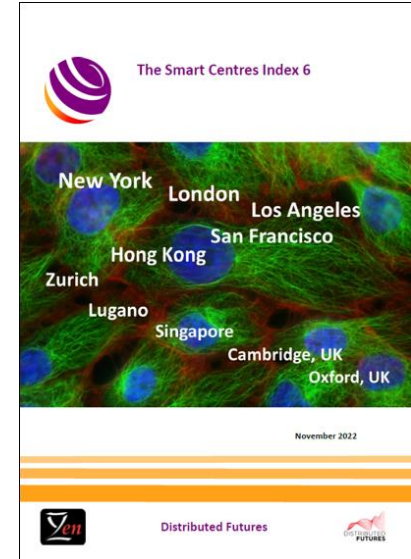



SMART CENTRES INDEX 6 GLOBAL LAUNCH

22 November 2022



"Zest for Enlightenment"



 @ZYen_DF

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FUTURES

Welcome & Introduction



Peter Welch
Consultant & FS Club Programme Manager
Z/Yen Group





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Programme



09:00	Welcome & Introduction <i>Peter Welch, Consultant & FS Club Programme Manager, Z/Yen Group</i>
09:05	Smart Centres Index 6 Results <i>Mike Wardle, Chief Executive Officer & Head Of Indices, Z/Yen Group</i>
09:30	Questions, Comments & Answers
09:45	Close



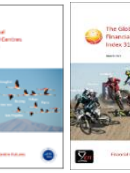
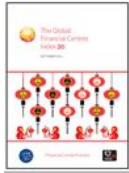
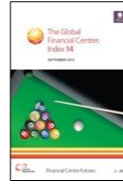
Smart Centres Index 6 Results



Mike Wardle
Chief Executive Officer & Head Of Indices
Z/Yen Group



Z/Yen Research



Smart Centres Index



- ◆ The Smart Centres Index is designed to track commercial centres' ability to create, develop, and deploy technology
- ◆ Aims to help investors, governments, and regulators view the attractiveness of centres for new technologies and products by measuring how attuned centres and their regulatory systems are to attracting innovation and growth in innovation and technology



Factor Assessment Index



- ◆ Combine perception data with quantitative data using advanced statistical modelling
- ◆ Individual assessments of commercial centres are associated with the quantitative data for that centre
- ◆ We can then predict how an individual would rate other cities based on their profile

SCI Dimensions



- ◆ The SCI measures three equally weighted dimensions:
 - Innovation Support – the approach taken to regulation and support for the innovation and technology industry provided by the commercial ecosystem
 - Creative Intensity - the extent to which technology and innovative industries are embedded in the economy of the centre
 - Delivery Capability - the quality of the work being undertaken in the field in the centre

SCI 6 Foreword



- ◆ Innovation and technology continue to advance at ever increasing pace.
- ◆ Novel computational methods, materials and sensing are transforming the physical sciences. The ability to engineer with biology is transforming the life and health sciences.
- ◆ It is however, the convergence of the scientific capabilities that have led to the largest steps forward and is most set to change the scene.
- ◆ Innovation and technology have ceased to be peripheral concerns in geopolitics. They are critical to growth and prosperity, to security and defence, to health and to climate change mitigation and to contributing to global goals.



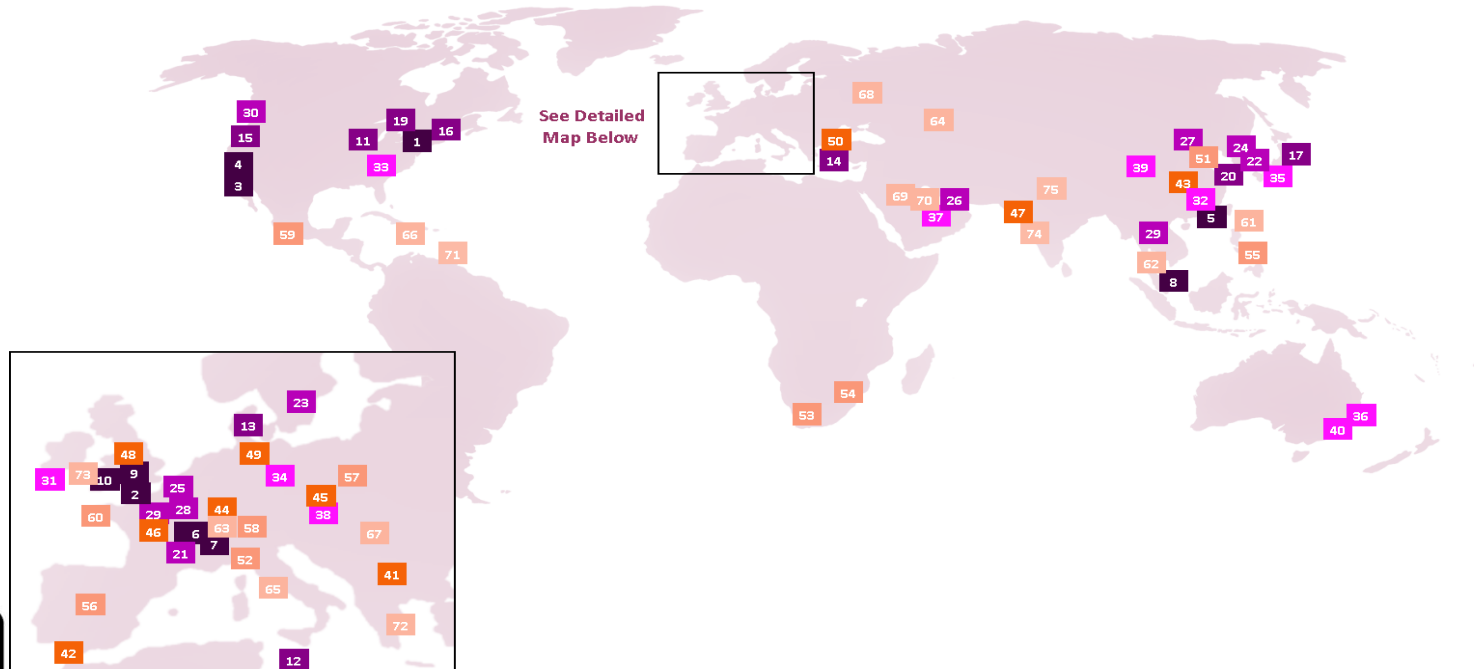
Professor Sir Anthony Finkelstein CBE FEng
President
City, University of London



The SCI World

75 Centres Featured In SCI 6

The SCI 6 World - Centres In The Index



SCI 6 Headlines

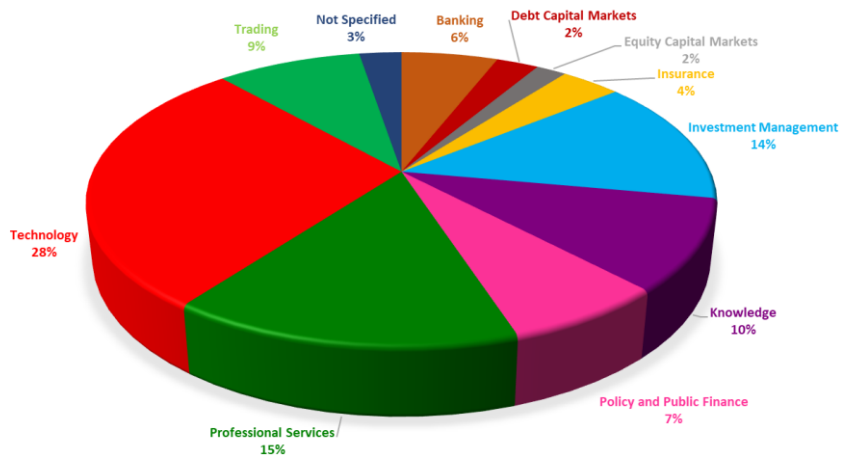


- ◆ Leading US centres show a strong performance and Asia/Pacific centres are generally improving in the index, having lagged behind in previous editions of the SCI
- ◆ New York maintained its first position in the index, with London second
- ◆ Los Angeles and San Francisco overtook Hong Kong
- ◆ Five Western European centres feature in the top 10, with three from the US. Singapore joins Hong Kong in the top 10 among Asia/Pacific centres
- ◆ Following an average increase of 2.3% in ratings in SCI 5, the average rating in SCI 6 fell by 4.17% and only four centres rose in the SCI 6 ratings
- ◆ Seven centres rose 10 or more places in the rankings in SCI 6, while just two centres fell 10 or more places

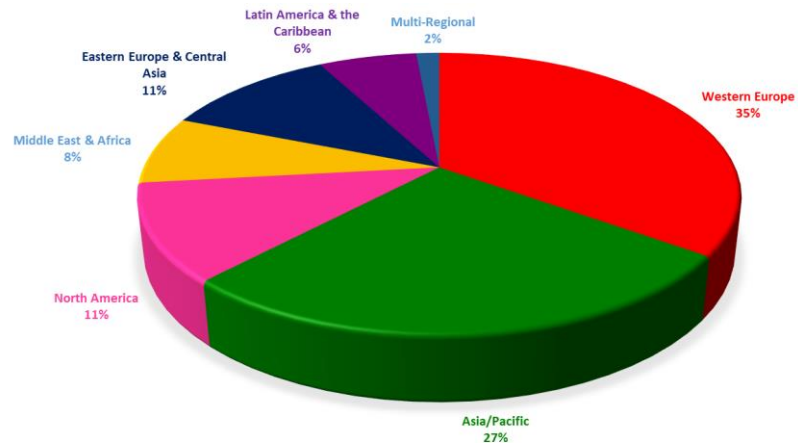
SCI 6 Respondents



Respondents By Sector



Respondents By Region



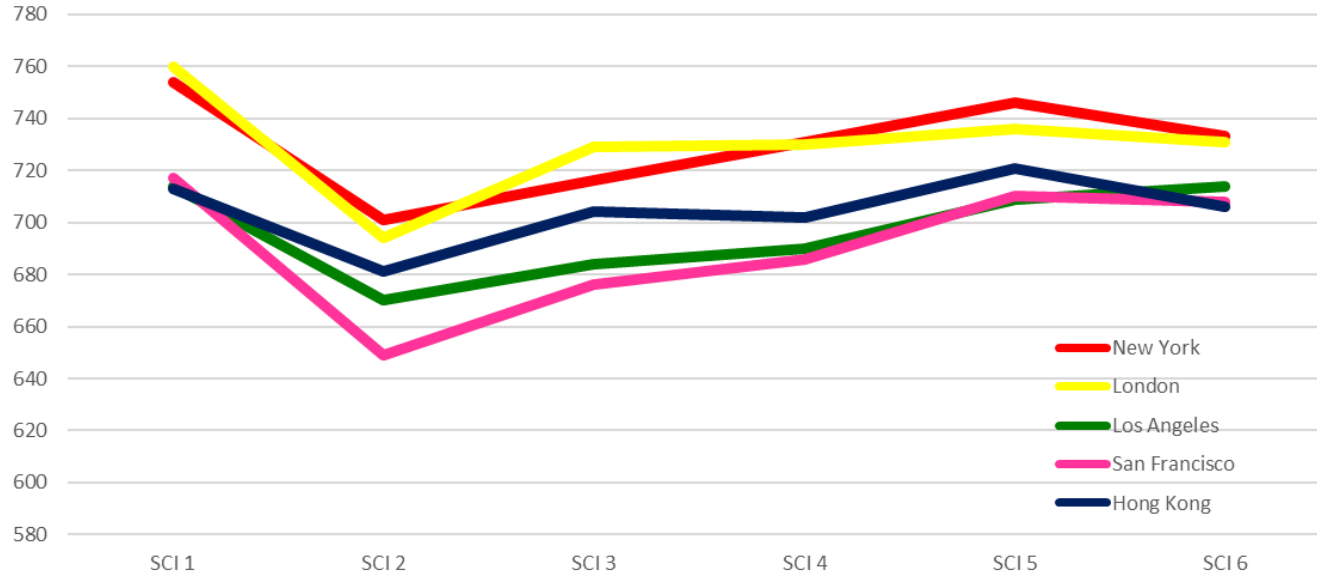
SCI 6 Top Twenty Centres



Centre	SCI 6		SCI 5		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	733	1	746	0	▼13
London	2	731	2	736	0	▼5
Los Angeles	3	714	10	709	▲7	▲5
San Francisco	4	708	9	710	▲5	▼2
Hong Kong	5	706	3	721	▼2	▼15
Zurich	6	705	4	716	▼2	▼11
Lugano	7	704	8	711	▲1	▼7
Singapore	8	703	12	707	▲4	▼4
Cambridge, UK	9	702	7	712	▼2	▼10
Oxford, UK	10	701	14	703	▲4	▼2
Chicago	11	697	11	708	0	▼11
Malta	12	696	15	702	▲3	▼6
Copenhagen	13	693	5	715	▼8	▼22
Tel Aviv	14	692	13	706	▼1	▼14
Seattle	15	691	18	697	▲3	▼6
Boston	16	689	6	713	▼10	▼24
Tokyo	17	677	28	675	▲11	▲2
Amsterdam	18	676	19	695	▲1	▼19
Toronto	19	675	31	672	▲12	▲3
Shanghai	20	674	20	692	0	▼18



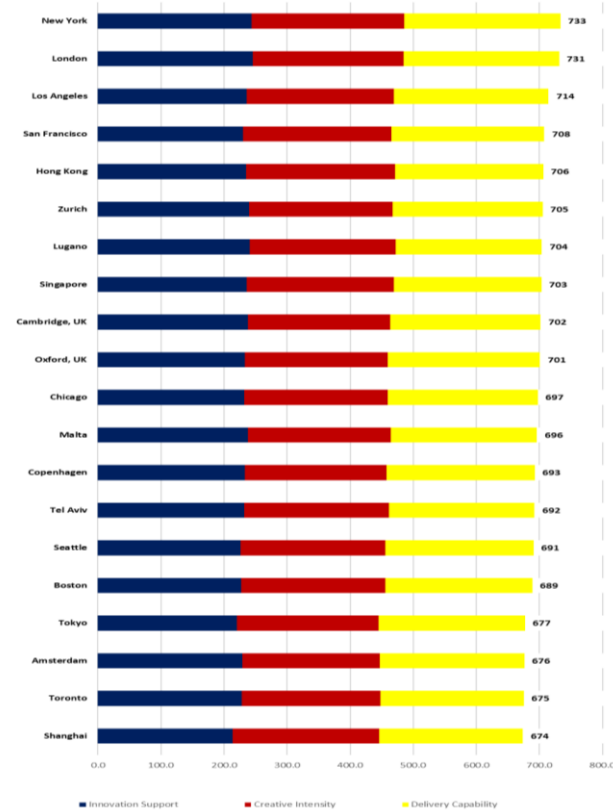
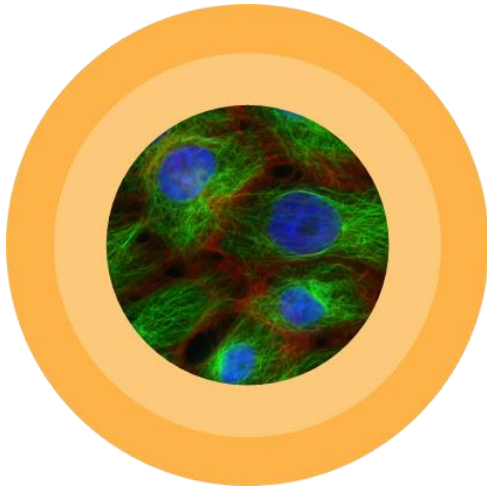
Leading Centres Over Time



SCI 6 Top Twenty Centres By Dimension



- ◆ The SCI Dimensions
 - Innovation Support
 - Creative Intensity
 - Delivery Capability





Western Europe – Top 15

Centre	SCI 6		SCI 5		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
London	2	731	2	736	0	▼5
Zurich	6	705	4	716	▼2	▼11
Lugano	7	704	8	711	▲1	▼7
Cambridge, UK	9	702	7	712	▼2	▼10
Oxford, UK	10	701	14	703	▲4	▼2
Malta	12	696	15	702	▲3	▼6
Copenhagen	13	693	5	715	▼8	▼22
Amsterdam	18	676	19	695	▲1	▼19
Geneva	21	673	16	700	▼5	▼27
Stockholm	23	671	17	698	▼6	▼27
Brussels	25	664	29	674	▲4	▼10
Luxembourg	28	656	25	679	▼3	▼23
Dublin	31	653	21	691	▼10	▼38
Berlin	34	650	30	673	▼4	▼23
Vienna	38	638	41	662	▲3	▼24

- ◆ 27 Western European centres feature in SCI 6, with five in the top 10
- ◆ 11 centres in the region fell in while 16 centres maintained or improved their rank position - Gibraltar and Milan rose more than 10 places.

North America



Centre	SCI 6		SCI 5		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	733	1	746	0	▼13
Los Angeles	3	714	10	709	▲7	▲5
San Francisco	4	708	9	710	▲5	▼2
Chicago	11	697	11	708	0	▼11
Seattle	15	691	18	697	▲3	▼6
Boston	16	689	6	713	▼10	▼24
Toronto	19	675	31	672	▲12	▲3
Vancouver	30	654	44	659	▲14	▼5
Washington DC	33	651	35	668	▲2	▼17

- ◆ Nine North American centres feature in SCI 6 and three are in the world top 10, with Los Angeles and San Francisco moving up into 3rd and 4th place
- ◆ All centres in the region other than Boston maintained or improved their rank position compared with SCI 5

Asia/Pacific – Top 15



Centre	SCI 6		SCI 5		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Hong Kong	5	706	3	721	▼2	▼15
Singapore	8	703	12	707	▲4	▼4
Tokyo	17	677	28	675	▲11	▲2
Shanghai	20	674	20	692	0	▼18
Busan	22	672	27	676	▲5	▼4
Seoul	24	669	24	680	0	▼11
Beijing	27	657	22	685	▼5	▼28
Bangkok	29	655	32	671	▲3	▼16
Shenzhen	32	652	34	669	▲2	▼17
Osaka	35	649	39	664	▲4	▼15
Sydney	36	646	42	661	▲6	▼15
Chengdu	39	636	52	643	▲13	▼7
Melbourne	40	635	45	657	▲5	▼22
Guangzhou	43	616	46	655	▲3	▼39
GIFT City-Gujarat	47	607	50	646	▲3	▼39

- ◆ Hong Kong, Singapore, Tokyo, and Shanghai rank in the top 20
- ◆ Only three centres in the region fell in the rankings in SCI 6, with Tokyo, Chengdu, and Taipei improving more than 10 places.

Eastern Europe & Central Asia



Centre	SCI 6		SCI 5		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Sofia	41	622	37	666	▼4	▼44
Prague	45	613	36	667	▼9	▼54
Istanbul	50	599	58	627	▲8	▼28
Budapest	57	583	56	632	▼1	▼49
Astana	64	569	New	New	New	New
Warsaw	67	563	63	621	▼4	▼58
Moscow	68	562	68	604	0	▼42
Athens	72	537	67	605	▼5	▼68

- ◆ Sofia overtook Prague as the leading centre in the region, although both centres lost ground
- ◆ Istanbul was the only centre in Eastern Europe & Central Asia to improve its position
- ◆ Astana entered the SCI for the first time

Middle East & Africa



Centre	SCI 6		SCI 5		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Tel Aviv	14	692	13	706	▼1	▼14
Dubai	26	661	23	681	▼3	▼20
Abu Dhabi	37	641	33	670	▼4	▼29
Cape Town	53	587	49	647	▼4	▼60
Johannesburg	54	586	62	622	▲8	▼36
Riyadh	69	561	69	600	0	▼39
Bahrain	70	557	73	576	▲3	▼19

- ◆ Tel Aviv leads this region in 14th position - down one place from SCI 5
- ◆ Other leading centres in the region slipped a few rank places

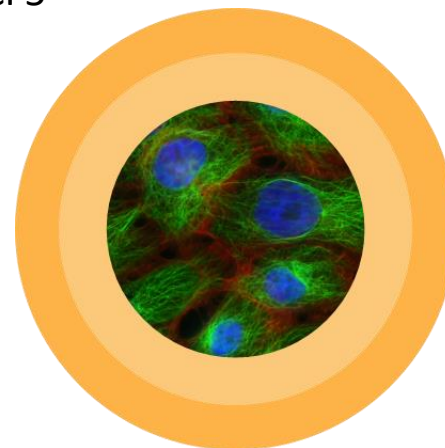


Latin America & The Caribbean

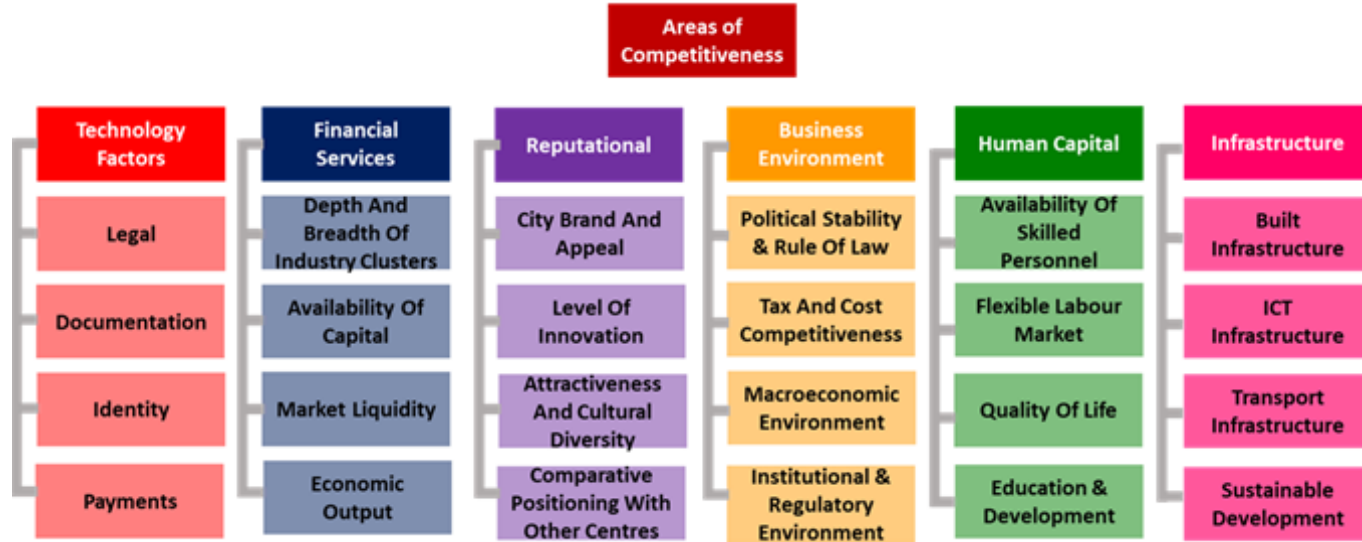


Centre	SCI 6		SCI 5		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Mexico City	59	577	51	645	▼8	▼68
Cayman Islands	66	564	72	585	▲6	▼21
Trinidad & Tobago	71	550	New	New	New	New

- ◆ Mexico City and the Cayman Islands are joined in this edition of the index by Trinidad & Tobago within the Latin America & The Caribbean region
- ◆ Mexico City fell eight rank places in SCI 6, while Cayman Islands improved six places, recovering some of the ground it lost in SCI 5



SCI Taxonomy



Areas Of Competitiveness



Rank	Technology	Business Environment	Human Capital	Infrastructure	Financial Sector Development	Reputational & General
1	New York	London	New York	London	London	Lugano
2	London	New York	London	New York	New York	Cambridge, UK
3	Singapore	Amsterdam	Singapore	Singapore	San Francisco	Oxford, UK
4	Los Angeles	Singapore	Hong Kong	Zurich	Los Angeles	New York
5	Lugano	Copenhagen	San Francisco	Hong Kong	Boston	London
6	Amsterdam	Hong Kong	Chicago	Cambridge, UK	Chicago	Los Angeles
7	Chicago	Zurich	Toronto	Lugano	Singapore	San Francisco
8	San Francisco	San Francisco	Amsterdam	San Francisco	Zurich	Hong Kong
9	Hong Kong	Tel Aviv	Los Angeles	Los Angeles	Hong Kong	Zurich
10	Zurich	Lugano	Zurich	Oxford, UK	Tel Aviv	Malta
11	Boston	Los Angeles	Luxembourg	Seattle	Geneva	Geneva
12	Luxembourg	Seoul	Tel Aviv	Tel Aviv	Oxford, UK	Chicago
13	Brussels	Oxford, UK	Boston	Amsterdam	Malta	Singapore
14	Toronto	Cambridge, UK	Geneva	Chicago	Cambridge, UK	Boston
15	Busan	Chicago	Brussels	Geneva	Lugano	Stockholm



Technology Effect



Rank	All Factors	Technology Factors
1	New York	New York
2	London	London
3	Los Angeles	Singapore (+5)
4	San Francisco	Los Angeles (-1)
5	Hong Kong	Lugano (+2)
6	Zurich	Amsterdam (+12)
7	Lugano	Chicago (+4)
8	Singapore	San Francisco (-4)
9	Cambridge, UK	Hong Kong (-4)
10	Oxford, UK	Zurich (-4)
11	Chicago	Boston (+5)
12	Malta	Luxembourg (+16)
13	Copenhagen	Brussels (+12)
14	Tel Aviv	Toronto (+5)
15	Seattle	Busan (+7)



Reputation Advantage



Centre - Top 15	Weighted Average Assessment	SCI 6 Rating	SCI 6 Reputational Advantage
GIFT City-Gujarat	793	607	186
Copenhagen	832	693	139
Stockholm	800	671	129
San Francisco	832	708	124
London	840	731	109
Tel Aviv	801	692	109
Geneva	779	673	106
New York	835	733	102
Los Angeles	815	714	101
Frankfurt	715	615	100
Gibraltar	720	621	99
Busan	767	672	95
Oxford, UK	794	701	93
Amsterdam	768	676	92
Zurich	793	705	88



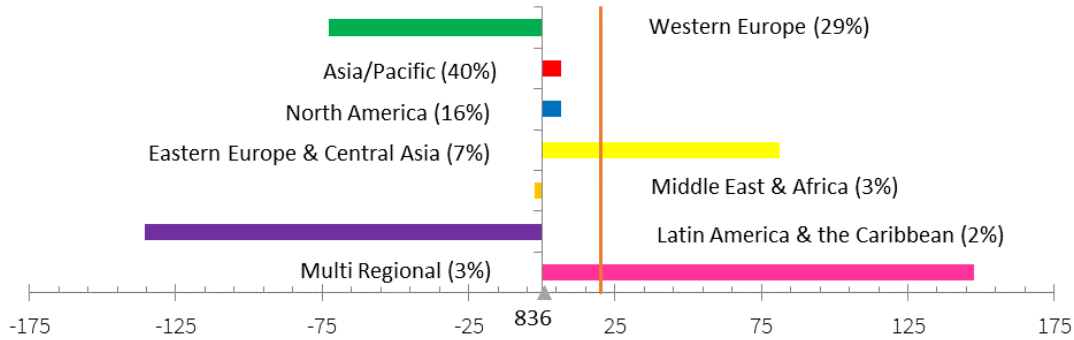
Reputational Disadvantage



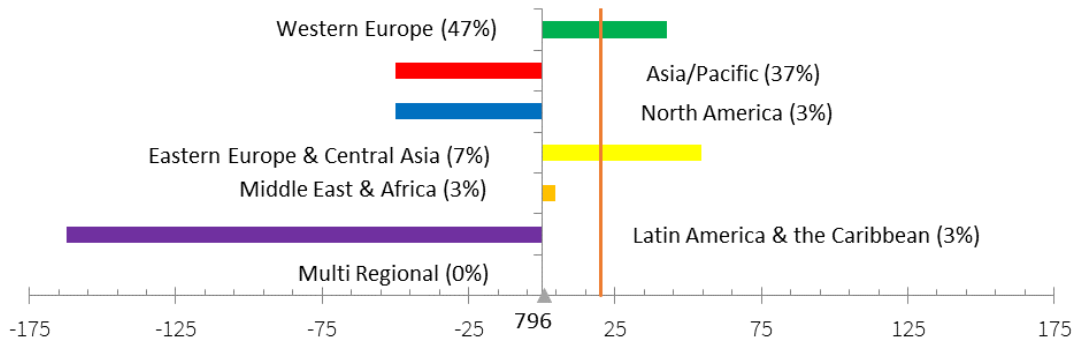
Centre - Bottom 15	Weighted Average Assessment	SCI 6 Rating	SCI6 Reputational Advantage
Cayman Islands	487	564	-77
Trinidad & Tobago	470	550	-80
Taipei	482	574	-92
Stuttgart	476	570	-94
Osaka	554	649	-95
Tianjin	499	598	-99
Bangkok	554	655	-101
Dublin	539	653	-114
Athens	405	537	-132
Guangzhou	482	616	-134
Chengdu	500	636	-136
Melbourne	497	635	-138
Isle of Man	388	533	-145
New Delhi	125	454	-329
Mumbai	166	498	-332



Regional Difference In Assessments



London



Zurich



Correlation Between SCI 6 & Instrumental Factors



Instrumental Factor	R Squared
Fintech Activity Index	0.544
Global Innovation Index	0.534
Urban Mobility Readiness Index	0.516
Safe Cities	0.492
Adjusted Net National Income Per Capita	0.472
The Global Green Finance Index	0.462
Global Financial Centres Index	0.444
Telecommunication Infrastructure Index	0.441
Innovation Cities Global Index	0.428
Government Effectiveness	0.415

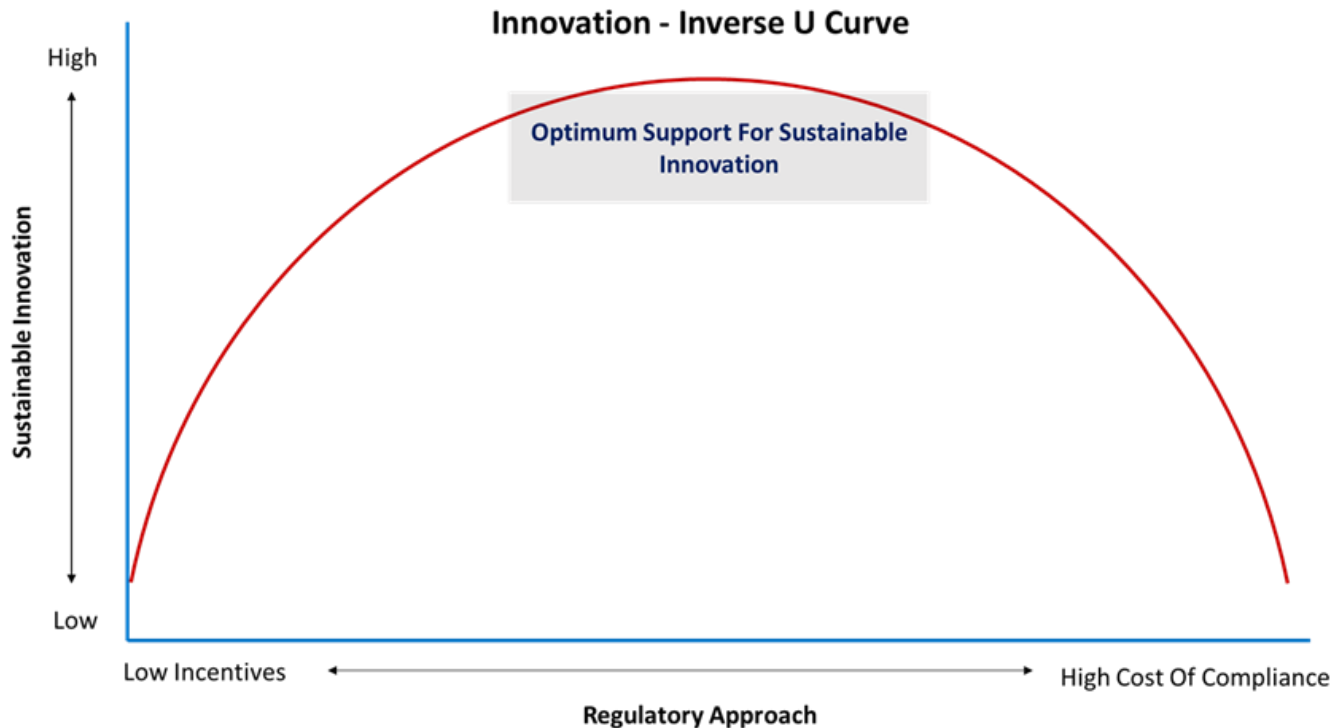
Correlation With Technology Factors



Technology Factors	R Squared
Fintech Activity Index	0.544
Telecommunication Infrastructure Index	0.441
E-Government Development Index	0.361
FinTech Index	0.335
Smart City Index	0.331
E-Participation Index	0.291
ICT Development Index	0.280
Global AI Index	0.232
Open Data Barometer	0.221
Worldwide Broadband Speed League	0.173



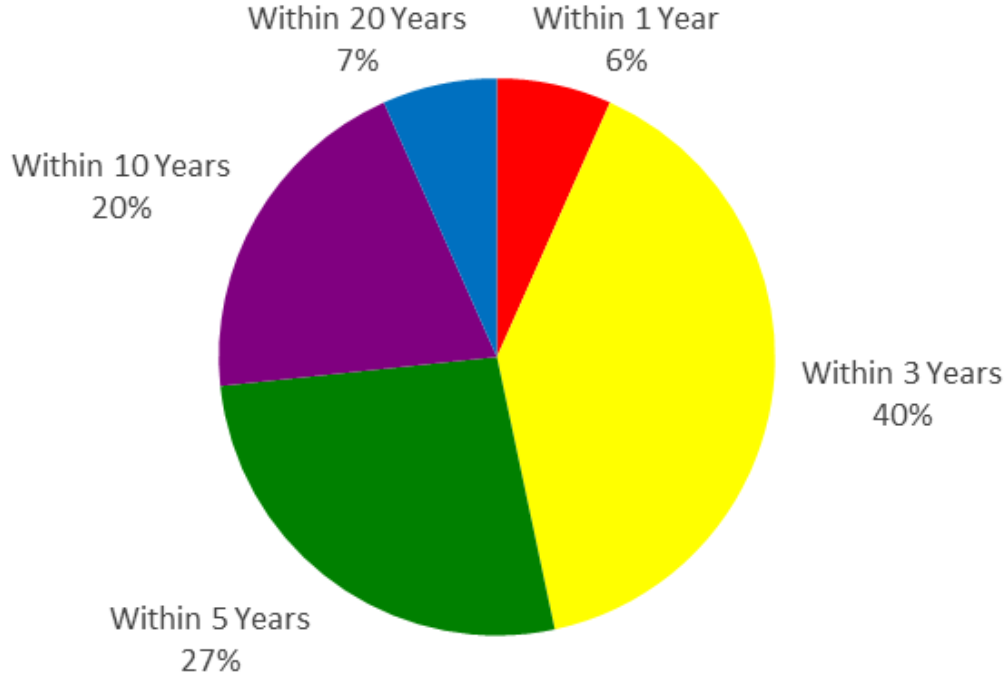
Regulatory Goals



Pace Of Technological Change



How quickly will quantum computers be able to break current public key encryption?



Number Of Patent Applications



Country	2020 Rank	2020 Patent Applications	2019 Rank	2019 Patent Applications
China	1	1,441,086	1	1,328,067
United States	2	496,123	2	521,738
Japan	3	423,264	3	453,816
South Korea	4	260,614	4	248,550
Germany	5	168,092	5	178,359
France	6	64,287	6	67,389
United Kingdom	7	53,079	7	54,794
Switzerland	8	44,806	8	46,147
India	9	37,895	10	34,052
Netherlands	10	32,812	9	35,468
Italy	11	32,551	11	32,028
Russia	12	30,283	12	29,712
Sweden	13	26,221	13	27,772
Canada	14	23,855	14	25,174
Israel	15	16,223	15	16,095

Source: World Intellectual Property Organisation

◆ Chinese centres do not feature as highly in the index as might be expected given their leading position in the filing of patents



Comments, Questions & Answers



Smart Centres Index 7 May 2023



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- Wed, 23 Nov (11:00-11:45) The Elephant In The Room – Software Risk & Digital Resilience
- Thu, 24 Nov (15:00-15:45) How Does Government Use Corporate Finance Techniques To Support Taxpayers?
- Fri, 25 Nov (11:00-11:45) Financial Centres Of The World 2022: Focus On Tallinn

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