



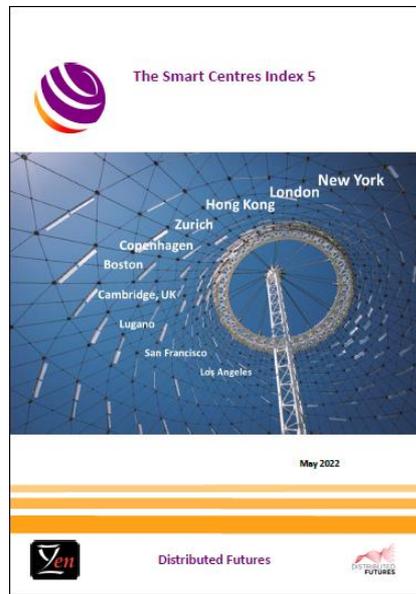
# SMART CENTRES INDEX 5 GLOBAL LAUNCH

24 May 2022



 @Zyen\_DF

*"Zest for Enlightenment"*



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FUTURES

# Welcome & Introduction



Professor Michael Mainelli  
Executive Chairman  
Z/Yen Group



# Programme



09:00	Welcome & Introduction <i>Professor Michael Mainelli, Executive Chairman, Z/Yen Group</i>
09:05	Smart Centres Index 5 Results Mike Wardle, Director & Head Of Indices, Z/Yen Group
09:20	Commentary & Observations <i>Professor Michael Mainelli, Executive Chairman, Z/Yen Group</i>
09:30	Questions, Comments & Answers
09:45	Close



# SCI Foreword



- ◆ The established clusters in North America, Europe, Asia and UK continue to thrive, yet the question is where the new clusters will emerge and how can governments accelerate their development?
- ◆ As a global communications company, BT strives to connect people and we invest heavily in R&D to drive new technologies and innovation
- ◆ The future of humanity can be brilliant: we have the technology and an entire galaxy, what more do we need:

*“Nature is a totally efficient, self-regenerating system. If we discover the laws that govern this system and live synergistically within them, sustainability will follow and humankind will be a success.”*

**R. Buckminster Fuller**



**Robert Hercock**  
**Chief Research Scientist,**  
**Security Research Practice**  
**BT**

# Smart Centres Index 5 Results



Mike Wardle  
Director & Head Of Indices  
Z/Yen Group



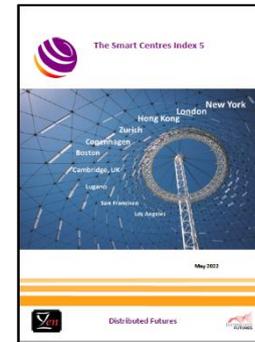
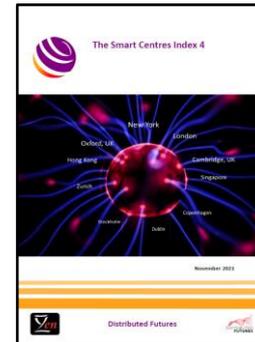
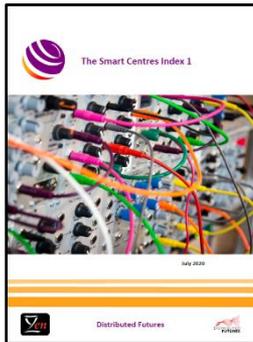
# Z/Yen Research



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

# SCI Dimensions



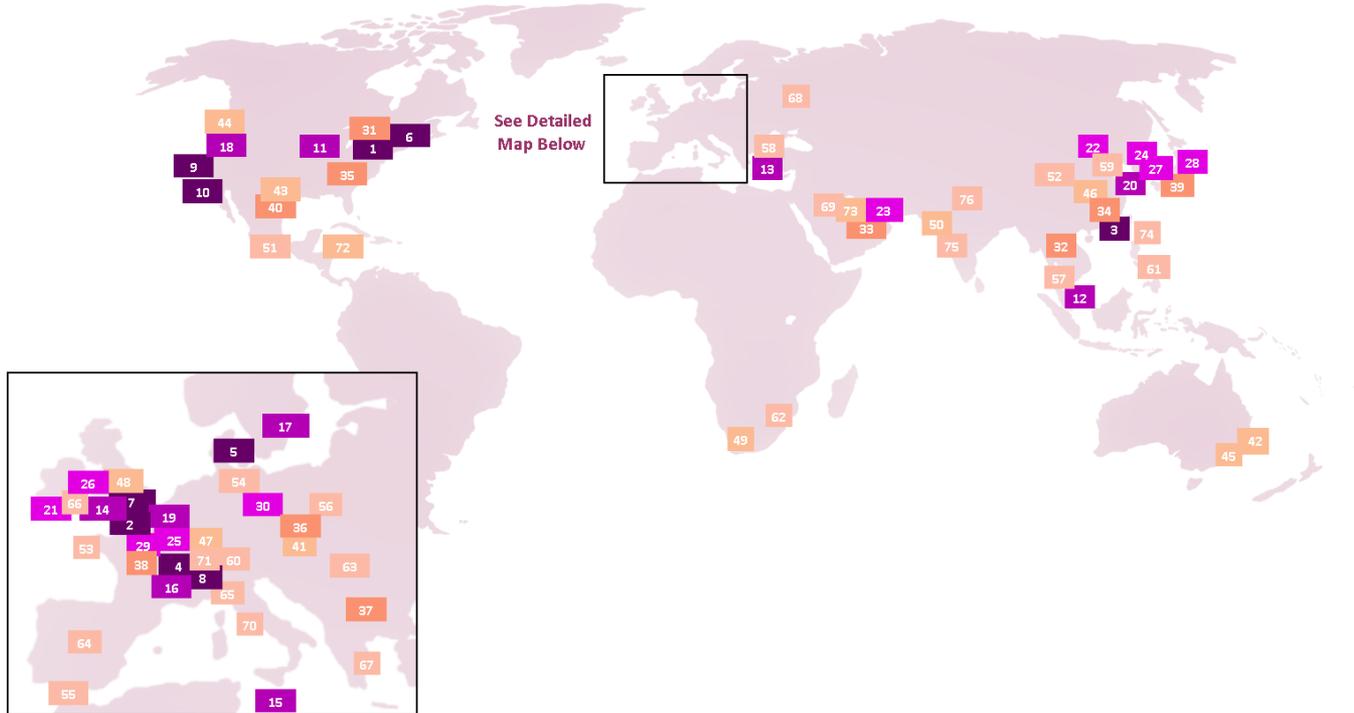
- ◆ The SCI measures three equally weighted dimensions:
  - Innovation Support – the approach taken to regulation and support for the innovation and technology industry provided by the commercial ecosystem
  - Creative Intensity - the extent to which technology and innovative industries are embedded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



# The SCI World

## 76 Centres Featured In SCI 5

### The SCI 5 World - Centres In The Index



# SCI 5 Headlines

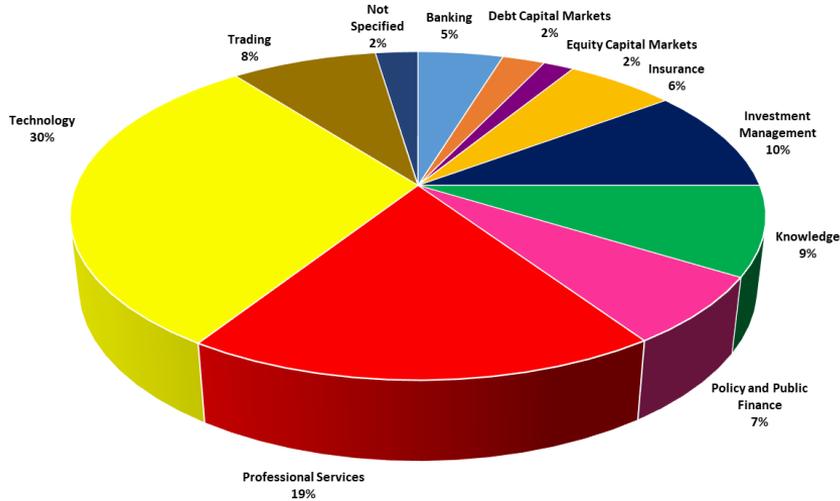


- ◆ Leading US and Western European centres show a strong performance. Asia/Pacific centres continue to lag slightly behind, which is surprising given the technology and science strengths of China in particular.
- ◆ New York maintained its first position in the index, with London second, and Hong Kong in third place.
- ◆ Five Western European centres feature in the top 10, with four from the US. Hong Kong is the only Asia/Pacific centre in the top 10.
- ◆ The average rating for all centres rose 2.3%, compared with SCI 4. Only five centres fell in the SCI ratings.
- ◆ Only five centres rose 10 or more places in the rankings in SCI 5, while nine centres fell 10 or more places.

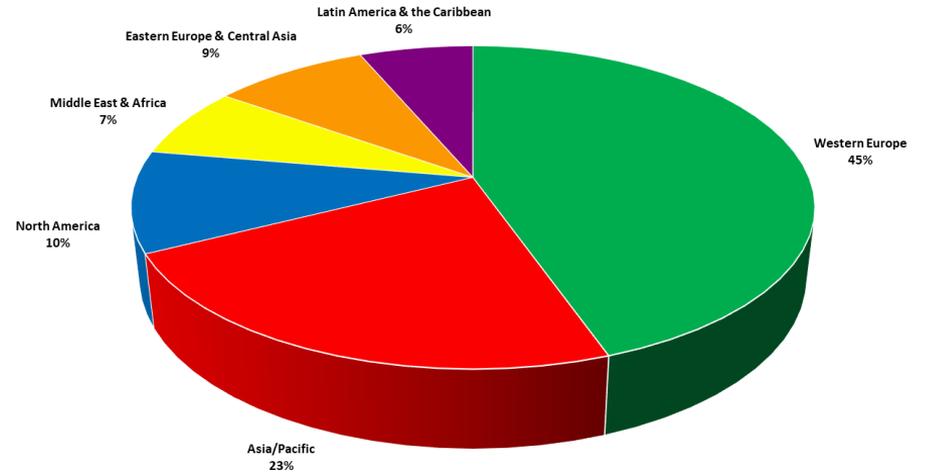
# SCI 5 Respondents



## Respondents By Sector



## Respondents By Region



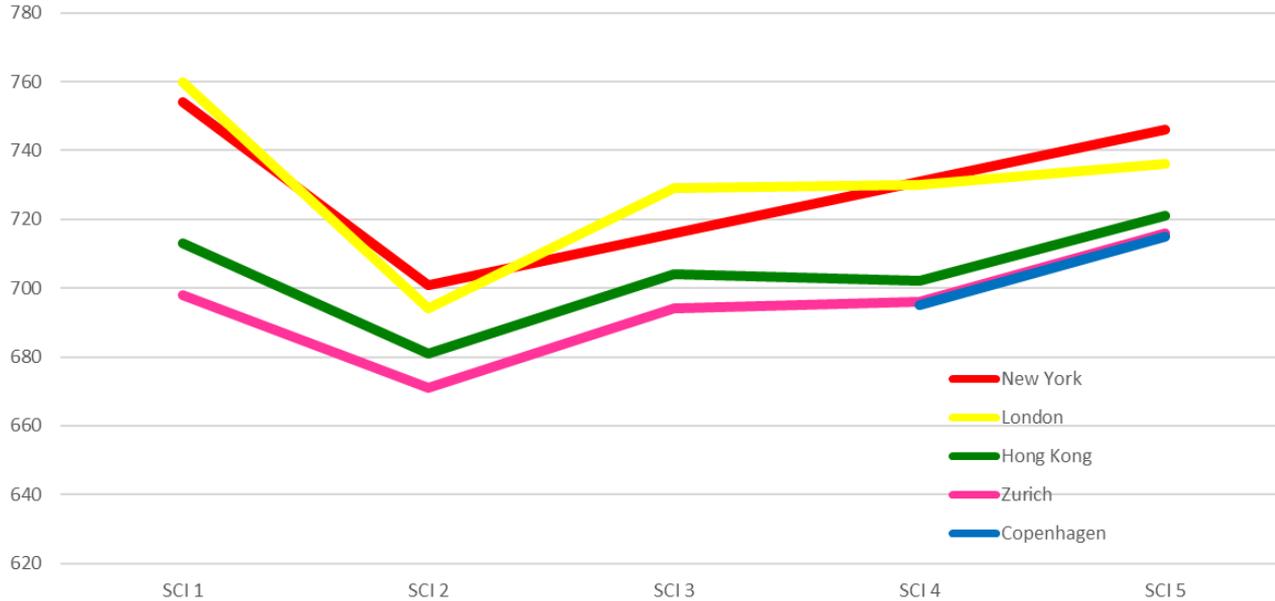
# SCI 5 Top Twenty Centres



Centre	SCI 5		SCI 4		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	746	1	731	0	▲15
London	2	736	2	730	0	▲6
Hong Kong	3	721	5	702	▲2	▲19
Zurich	4	716	7	696	▲3	▲20
Copenhagen	5	715	8	695	▲3	▲20
Boston	6	713	16	687	▲10	▲26
Cambridge, UK	7	712	4	707	▼3	▲5
Lugano	8	711	12	691	▲4	▲20
San Francisco	9	710	17	686	▲8	▲24
Los Angeles	10	709	13	690	▲3	▲19
Chicago	11	708	11	692	0	▲16
Singapore	12	707	6	700	▼6	▲7
Tel Aviv	13	706	18	685	▲5	▲21
Oxford, UK	14	703	3	710	▼11	▼7
Malta	15	702	20	683	▲5	▲19
Geneva	16	700	15	688	▼1	▲12
Stockholm	17	698	9	694	▼8	▲4
Seattle	18	697	14	689	▼4	▲8
Amsterdam	19	695	19	684	0	▲11
Shanghai	20	692	28	659	▲8	▲33



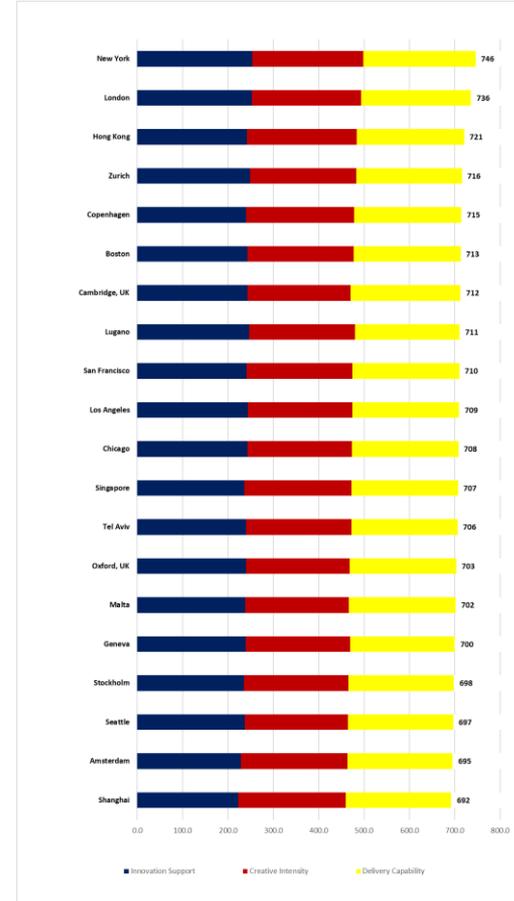
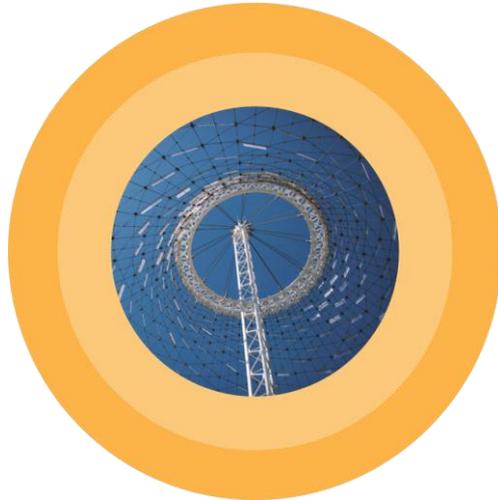
# Leading Centres Over Time



# SCI 5 Top Twenty Centres By Dimension



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





# Western Europe – Top 15

Centre	SCI 5		SCI 4		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
London	2	736	2	730	0	▲ 6
Zurich	4	716	7	696	▲ 3	▲ 20
Copenhagen	5	715	8	695	▲ 3	▲ 20
Cambridge, UK	7	712	4	707	▼ 3	▲ 5
Lugano	8	711	12	691	▲ 4	▲ 20
Oxford, UK	14	703	3	710	▼ 11	▼ 7
Malta	15	702	20	683	▲ 5	▲ 19
Geneva	16	700	15	688	▼ 1	▲ 12
Stockholm	17	698	9	694	▼ 8	▲ 4
Amsterdam	19	695	19	684	0	▲ 11
Dublin	21	691	10	693	▼ 11	▼ 2
Luxembourg	25	679	30	657	▲ 5	▲ 22
Glasgow	26	678	21	669	▼ 5	▲ 9
Brussels	29	674	40	644	▲ 11	▲ 30
Berlin	30	673	22	666	▼ 8	▲ 7

- ◆ 28 Western European centres feature in SCI 5, with five centres ranking in the top 10
- ◆ 19 centres in the region fell in the rankings as other centres improved

# North America



Centre	SCI 5		SCI 4		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	746	1	731	0	▲15
Boston	6	713	16	687	▲10	▲26
San Francisco	9	710	17	686	▲8	▲24
Los Angeles	10	709	13	690	▲3	▲19
Chicago	11	708	11	692	0	▲16
Seattle	18	697	14	689	▼4	▲8
Toronto	31	672	27	660	▼4	▲12
Washington DC	35	668	29	658	▼6	▲10
Austin	40	663	39	645	▼1	▲18
Dallas / Fort Worth	43	660	33	654	▼10	▲6
Vancouver	44	659	35	652	▼9	▲7

- ◆ 11 North American centres feature in SCI 5 and four are in the world top 10
- ◆ The leading centres in the region maintained or improved their ranking, while other centres fell back

# Asia/Pacific – Top 15



Centre	SCI 5		SCI 4		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Hong Kong	3	721	5	702	▲ 2	▲ 19
Shanghai	20	692	28	659	▲ 8	▲ 33
Beijing	22	685	23	664	▲ 1	▲ 21
Shenzhen	34	669	48	628	▲ 14	▲ 41
Chengdu	52	643	New	New	New	New
Tianjin	59	625	57	612	▼ 2	▲ 13
Manila	61	623	68	573	▲ 7	▲ 50
Taipei	74	562	70	546	▼ 4	▲ 16
Mumbai	75	501	71	458	▼ 4	▲ 43
New Delhi	76	472	72	446	▼ 4	▲ 26
Hong Kong	3	721	5	702	▲ 2	▲ 19
Shanghai	20	692	28	659	▲ 8	▲ 33
Beijing	22	685	23	664	▲ 1	▲ 21
Shenzhen	34	669	48	628	▲ 14	▲ 41
Chengdu	52	643	New	New	New	New

- ◆ 21 Asia/Pacific centres now feature in the SCI, with Chengdu joining the index for the first time
- ◆ Hong Kong, Singapore, and Shanghai rank in the top 20 in the world

# Eastern Europe & Central Asia



Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Prague	36	667	24	663	▼ 12	▲ 4
Sofia	37	666	46	636	▲ 9	▲ 30
Budapest	56	632	56	613	0	▲ 19
Istanbul	58	627	64	589	▲ 6	▲ 38
Warsaw	63	621	61	603	▼ 2	▲ 18
Athens	67	605	New	New	New	New
Moscow	68	604	58	611	▼ 10	▼ 7

- ◆ Prague maintained its lead in the region, although it fell 12 places in the rankings in SCI 5. Sofia takes second place in the region.
- ◆ Athens entered the SCI for the first time

# Middle East & Africa



Centre	SCI 5		SCI 4		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Tel Aviv	13	706	18	685	▲ 5	▲ 21
Dubai	23	681	26	661	▲ 3	▲ 20
Abu Dhabi	33	670	32	655	▼ 1	▲ 15
Cape Town	49	647	59	610	▲ 10	▲ 37
Johannesburg	62	622	63	597	▲ 1	▲ 25
Riyadh	69	600	67	579	▼ 2	▲ 21
Bahrain	73	576	New	New	New	New

- ◆ Tel Aviv leads this region, rising five places to 13th position
- ◆ Bahrain entered the index for the first time

# Latin America & The Caribbean



Centre	SCI 5		SCI 4		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
Mexico City	51	645	54	617	▲ 3	▲ 28
Cayman Islands	72	585	49	624	▼ 23	▼ 39

- ◆ Mexico City and the Cayman Islands are the only two centres in the region to feature in the SCI
- ◆ While Mexico City improved its ranking by 3 places, Cayman Islands fell 23 places



# SCI Taxonomy



# Areas Of Competitiveness



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



# Technology Effect



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



# Reputation Advantage



Centre - Top 15	Weighted Average Assessment	SCI 5 Rating	SCI 5 Reputational Advantage
GIFT City-Gujarat	792	646	146
Tel Aviv	824	706	118
London	834	736	98
Los Angeles	807	709	98
Copenhagen	811	715	96
San Francisco	804	710	94
Stockholm	788	698	90
New York	835	746	89
Boston	799	713	86
Singapore	791	707	84
Geneva	772	700	72
Gibraltar	707	638	69
Chicago	775	708	67
Oxford, UK	766	703	63
Zurich	779	716	63



# Reputational Disadvantage



Centre - Lowest 15	Weighted Average Assessment	SCI 5 Rating	SC 5 Reputational Advantage
Kuala Lumpur	546	631	-85
Stuttgart	495	593	-98
Cape Town	539	647	-108
Glasgow	569	678	-109
Moscow	493	604	-111
Bangkok	551	671	-120
Chengdu	512	643	-131
Melbourne	525	657	-132
Guangzhou	522	655	-133
Tianjin	474	625	-151
Osaka	510	664	-154
Taipei	402	562	-160
Athens	401	605	-204
New Delhi	183	472	-289
Mumbai	197	501	-304

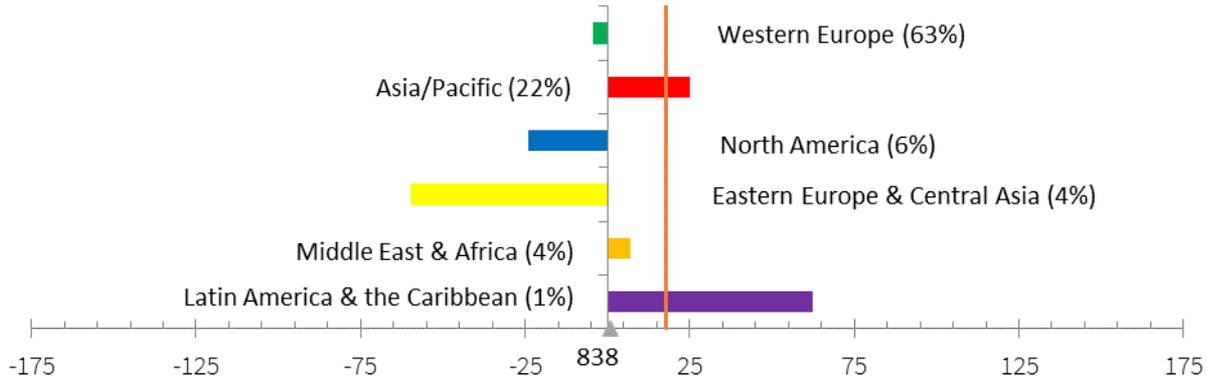


# Observations

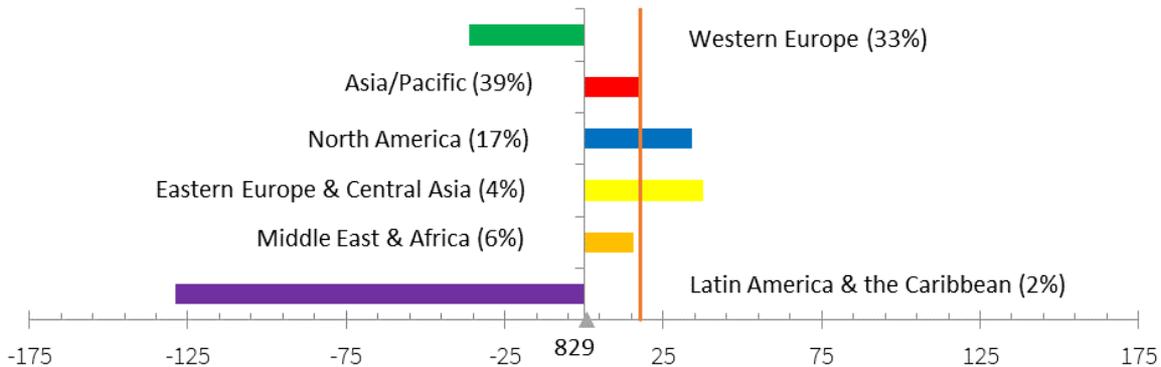
Professor Michael Mainelli  
Executive Chairman  
Z/Yen Group



# Regional Difference In Assessments



New York



London



# Correlation Between SCI 5 & Instrumental Factors



Instrumental Factor	R Squared
Urban Mobility Readiness Index	0.474
Telecommunication Infrastructure Index	0.440
Global Innovation Index	0.433
E-Participation Index	0.420
Safe Cities	0.408
Adjusted Net National Income Per Capita	0.380
Global Power City Index	0.357
Global Enabling Trade Report	0.356
World Competitiveness Scoreboard	0.355
Legatum Prosperity Index	0.355

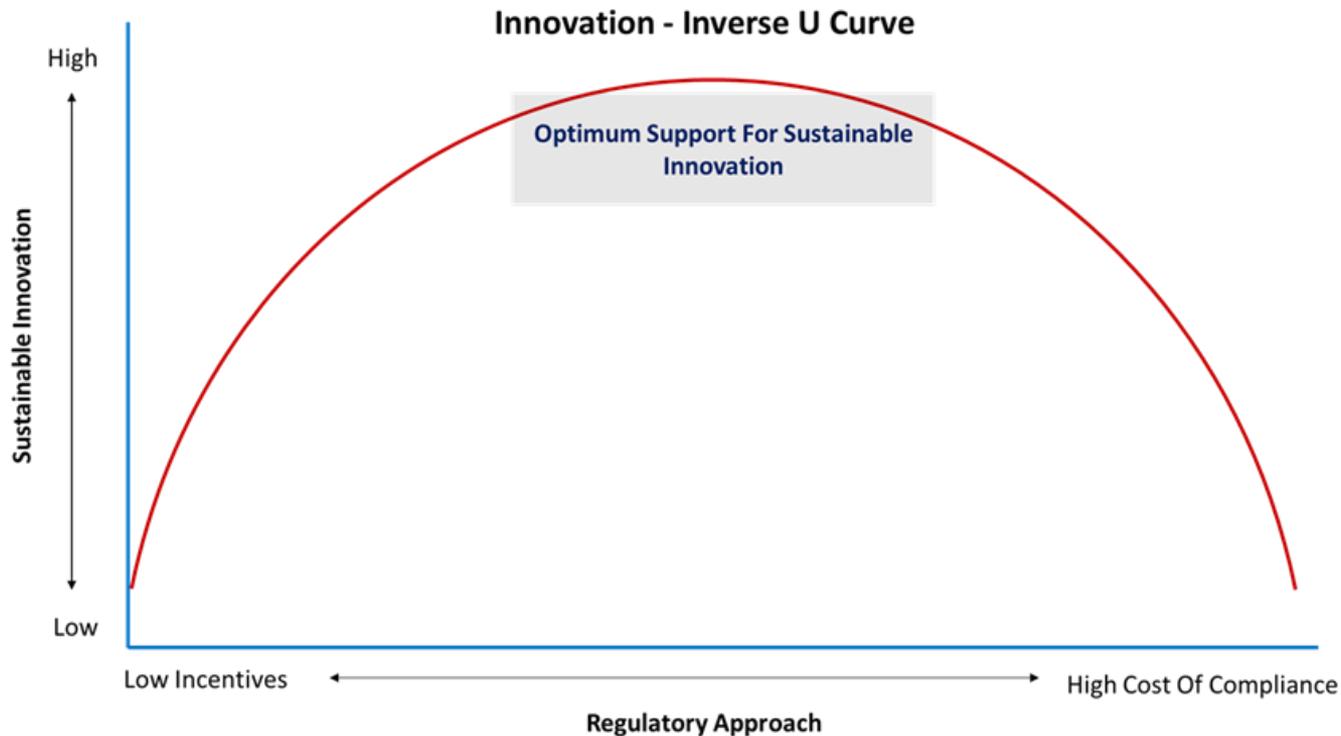
# Correlation With Technology Factors



Technology Factors	R Squared
Telecommunication Infrastructure Index	0.440
E-Participation Index	0.420
ICT Development Index	0.294
Smart City Index	0.267
FinTech Index	0.178
Global AI Index	0.155
Open Data Barometer	0.150
Worldwide Broadband Speed League	0.125
The Global Fintech Index	0.096
Use Of Blockchain In Healthcare	0.055



# Regulatory Goals



# 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

# Top Universities In Science & Technology



Country	Number Of Top 20 Universities In Engineering & Technology	Number Of Top 20 universities In Natural Sciences
US	7	8
UK	3	3
Singapore	2	2
France		3
Switzerland	2	2
Netherlands	1	
Italy	1	
China	1	
Japan	1	1
Germany	1	
South Korea	1	
Russian Federation		1

Source: QS Top Universities Subject Ranking



# Comments, Questions & Answers



# Smart Centres Index 6 November 2022



Take the SCI survey at:  
[www.smartcentresindex.net/survey/](http://www.smartcentresindex.net/survey/)