European Commission

The European ICT Poles of Excellence

An overview/ final results

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the session "Create and develop value by actors: clusters and associations"

Institute for Prospective Technological Studies - IPTS
Joint Research Centre - European Commission
www.jrc.es / is.jrc.es

Summary

An introduction: a naïve question?
Mapping ICT in the EU
Results observations
Conclusions

An introduction: a naïve question?

We are reaching the end of a long journey that started with an *apparently naïve* question

What and where are the European ICT Poles of world-class Excellence?

Why was this question, *apparently naïve* ?

- Because we claimed we knew the answer to the question: Dresden, Cambridge, Grenoble, Eindhoven,..? Hence, why investigate ?
- Or because we doubted about that answer?
- Or because we wanted to know more about the above locations, measure their "health" ?
- Or because we intuitively knew this would offer much more: a unique observation tool ?
- Or were we looking for the (mythical) Silicon valleys of Europe…?

The EIPE study answers the last 2 questions…

And in particular:

-The study has developped a tool, that firmly identifies the few epicentres of ICT innovation activity in Europe: Munchen, London, Paris and Karlsruhe !

-And their extended agglomeration to neighbouring regions

- Locations with intense ICT R&D, Innovation and Business activities
- Locations that do not work on isolation but are densely networked locally, at European and world level

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Whatever the question was, the project creates *a new perspective on ICT innovative activities in Europe*

Fundamented in past and current literature	▪ Agglomeration ▪ Globalisation ▪ Networking
European coverage/ Global and broad scope	▪ 27 Member States; World MNEs; Global networks ▪ 42 indicators; 3 sub-indicators; 1 EIPE Composite Indicator
ICT focus	▪ ICT as technology and as industry ▪ ICT R&D, but also Innovation and Businesses
Locational purpose	▪ European-wide data used ▪ Location data aggregated for 1303 NUTS3 level regions
Quantitative approach	▪ Fully based on available quantitative data ▪ Development of indicators
Transparent methodology	▪ Use of acknowledged databases and techniques ▪ Documented and standard modus operandi

Generating the EIPE Identity Card of each of the 1303 regions

Activity	Characteristic	Name of Indicator	Indicator ID	Nr
R&D	Agglomeration	Number of universities ranked in QS	AgRD 1	1
		Academic ranking of a Computer Science faculty	AgRD 2	2
		Employer ranking of a Computer Science faculty	AgRD 3	3
		Citations ranking of a Computer Science faculty	AgRD 4	4
		R&D expenditures by ICT firms	AgRD 5	5
		FP7 funding to private organisations	AgRD 6	6
		Number FP7 participations	AgRD 7	7
		FP7 funding to SMEs	AgRD 8	8
		Number of FP7 participations by SMEs	AgRD 9	9
		Location of ICT R&D centres	AgRD 10	10
		Ownership of ICT R&D centres	AgRD 11	11
		Scientific publications	AgRD 12	12
	Internationalisation	Outward ICT R&D internationalisation	IntRD 1	13
		Inward ICT R&D internationalisation	IntRD 2	14
	Networking	Degree	NetRD 1	15
		Closeness centrality	NetRD 2	16
		Betweenness centrality	NetRD 3	17
		Eigenvector centrality	NetRD 4	18
Innovation	Agglomeration	Investment in intangibles by ICT	AgIn 1	19
		Venture Capital financing of ICT firms	AgIn 2	20
		ICT patents	AgIn 3	21
	Internationalisation	International innovation collaborations	IntIn 1	22
	Networking	Degree	NetIn 1	23
		Closeness centrality	NetIn 2	24
		Betweenness centrality	NetIn 3	25
		Eigenvector centrality	NetIn 4	26
Business	Agglomeration	ICT Scoreboard Headquarters	AgBuss 1	27
		Ownership of ICT Scoreboard affiliates	AgBuss 2	28
		Location of ICT Scoreboard affiliates	AgBuss 3	29
		Number of ICT firms located in the region	AgBuss 4	30
		ICT employment	AgBuss 5	31
		Growth in ICT employment	AgBuss 6	32
		Turnover by ICT firms	AgBuss 7	33
		Growth in turnover by ICT firms	AgBuss 8	34
		Number of new investments in the ICT sector	AgBuss 9	35
	Internationalisation	Outward ICT business internationalisation	IntBuss 1	36
		Inward ICT business internationalisation	IntBuss 2	37
	Networking	In-degree	NetBuss 1	38
		Out-degree	NetBuss 2	39
		Closeness centrality	NetBuss 3	40
		Betweenness centrality	NetBuss 4	41
		Eigenvector centrality	NetBuss 5	42

Mapping ICT in the EU

Mapping ICT in EU

EIPE Indicator
Final Ranking (

Level	EIPE Rank	NUTS3 Code	Region name	EIPE CI
1st tier	1	DE212	Munchen, Kreisfreie Stadt	100
	2	UKI12	Inner London - East	97
	3	FR101	Paris	95
2nd tier	4	DE122	Karlsruhe, Stadtkreis	80
	5	UKH12	Cambridgeshire CC	78
	6	SE110	Stockholms lan	77
	7	DE711	Darmstadt, Kreisfreie Stadt	73
	8	FI181	Uusimaa	70
	9	NL414	Zuidoost-Noord-Brabant	70
	10	NL326	Groot-Amsterdam	64
	11	BE242	Arr. Leuven	61

Level				
1st tier				
2nd tier	8	F		
	9	N		
	10	N		
	11	B		
	12	D		
	13	FI		
	14	IT		
	15	D		
3rd tier	16	IE021	Dublin	57
	17	DEA21	Aachen, Kreisfreie Stadt	55
	18	NL333	Delft en Westland	55
	19	UKJ14	Oxfordshire	51
	20	UKM25	Edinburgh, City of	51
	21	DE111	Stuttgart, Stadtkreis	50
	22	DE125	Heidelberg, Stadtkreis	49
	23	DE21H	Munchen, Landkreis	49
	24	BE100	Arr. de Bruxelles-Capitale	48
	25	DK011	Byen Kobenhavn	48
	26	UKJ11	Berkshire	48
	27	AT130	Wien	47
	28	ES300	Madrid	46
	29	UKJ23	Surrey	45
	30	DE712	Frankfurt am Main, Kreisfreie Stadt	44
	31	UKJ33	Hampshire CC	43
	32	DE252	Erlangen, Kreisfreie Stadt	42
	33	FR103	Yvelines	42
	34	DED21	Dresden, Kreisfreie Stadt	41

Mapping ICT in EU

EIPE Indicator
Final Ranking (>

Level	EIPE Rank	NUTS3 Cc
1st tier	1	DE212
	2	UKI12
	3	FR101
2nd tier	4	DE122
	5	UKH12
	6	SE110
	7	DE711
	8	FI181
	9	NL414
	10	NL326
	11	BE242
3rd tier	12	DEA22
	13	FR105
	14	ITC45
	15	DE300
	16	IE021
	17	DEA21
	18	NL333
	19	UKJ14
	20	UKM25
	21	DE111
	22	DE125
	23	DE21H
	24	BE100

		Hampshire CC	43
		Erlangen, Kreisfreie Stadt	42
		Yvelines	42
	34	DED21	Dresden, Kreisfreie Stadt	41

3rd tier	12	DEA22	Bonn, Kreisfreie Stadt	59
	13	FR105	Hauts-de-Seine	59
	14	ITC45	Milano	59
	15	DE300	Berlin	58
	16	IE021	Dublin	57
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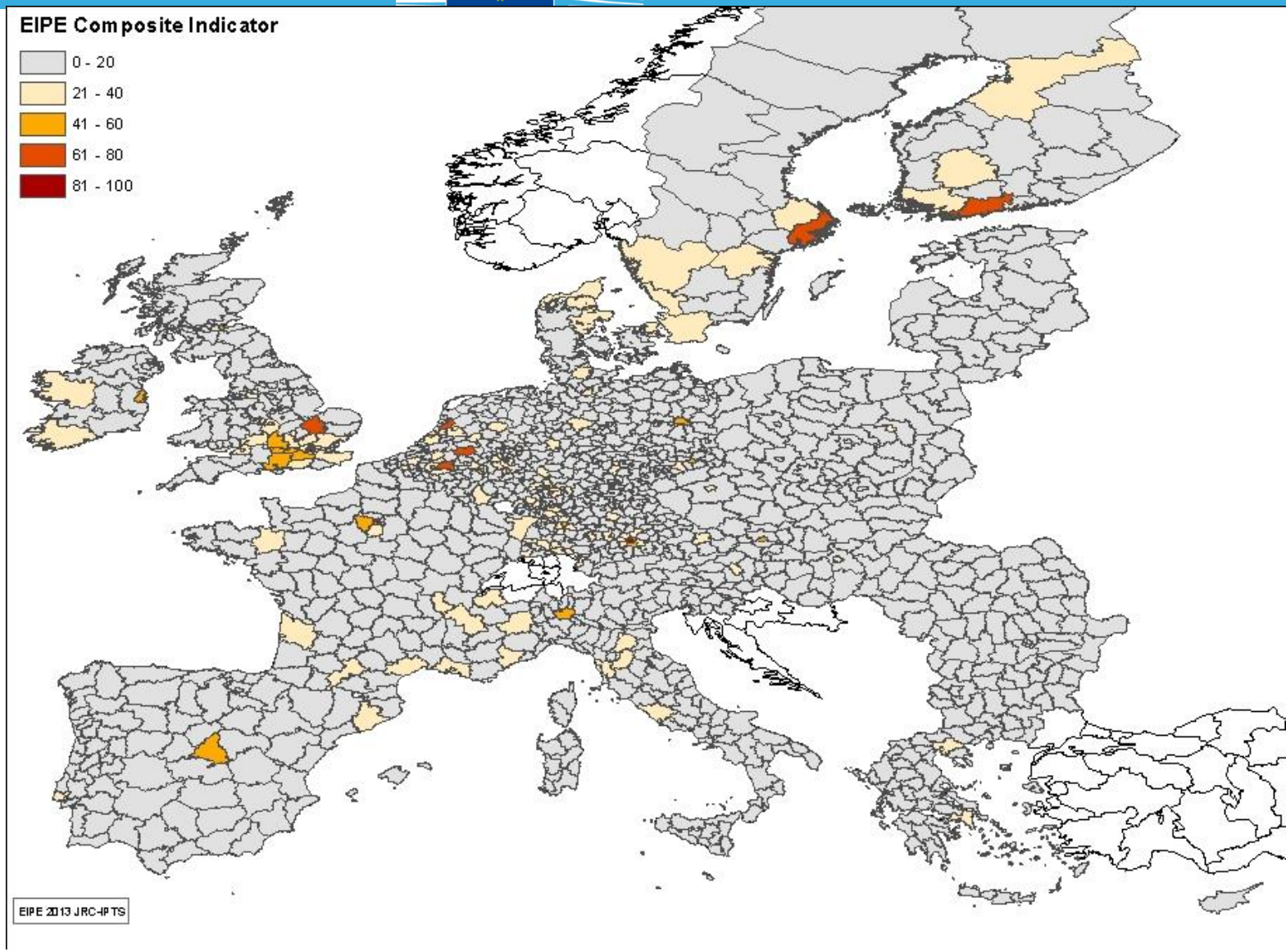
Mapping ICT in EU

EIPE Indicator



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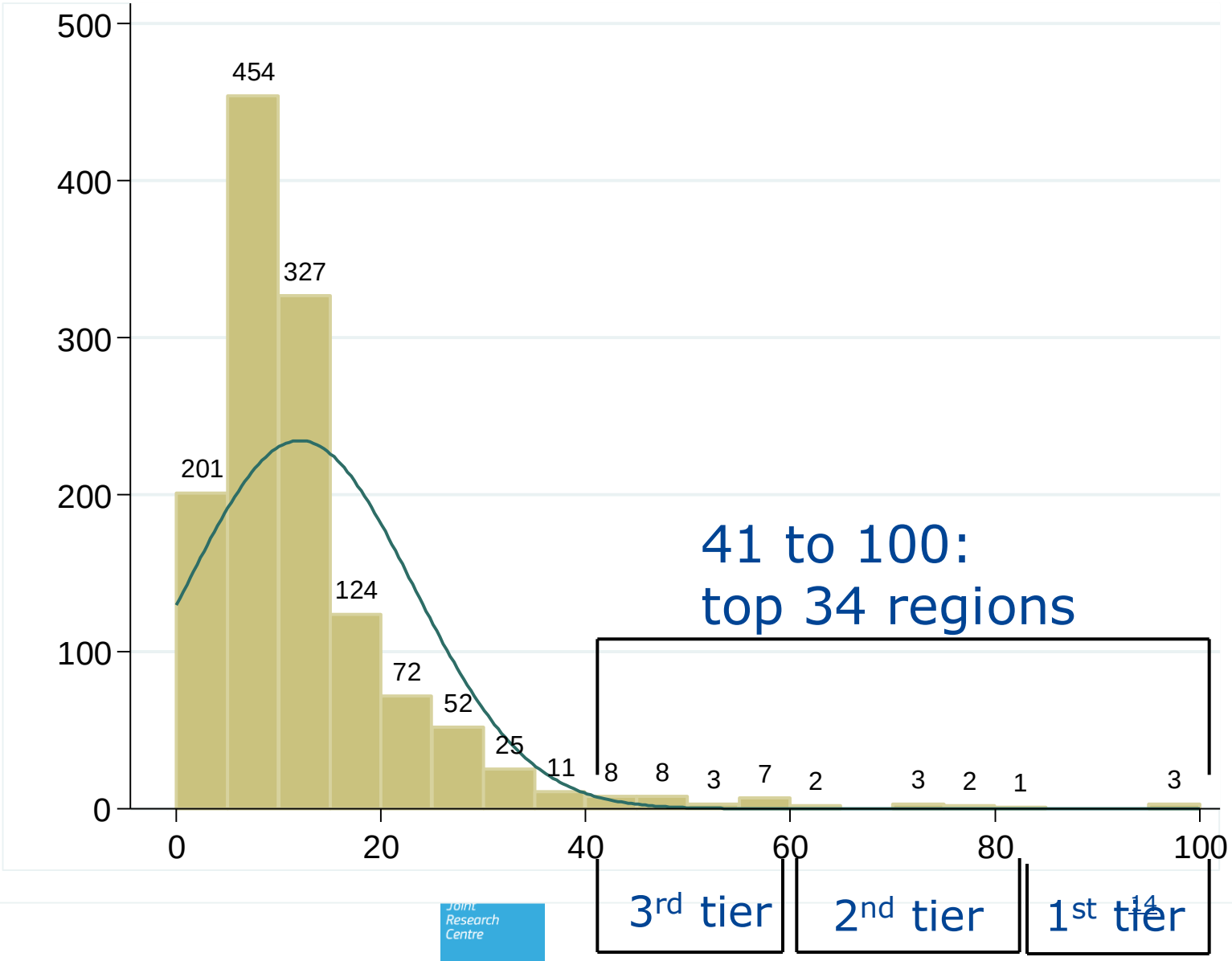
Mapping ICT in EU

EIPE Indicator Final Ranking: Frequency



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Mapping ICT in EU

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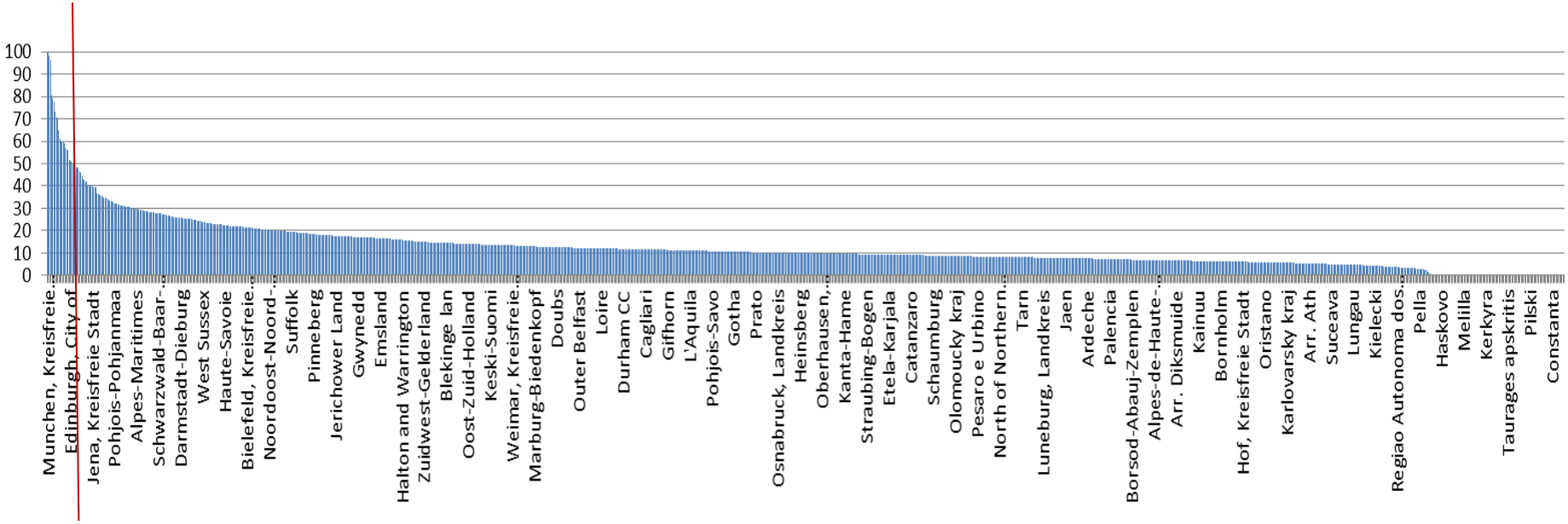
Distribution of EIPE indicator values



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Results observations

Results observations

EIPE Indicator
Final Ranking (> 40)

Concentrated in a few places

Level	EIPE Rank	NUTS3 Code	Region name	EIPE CI
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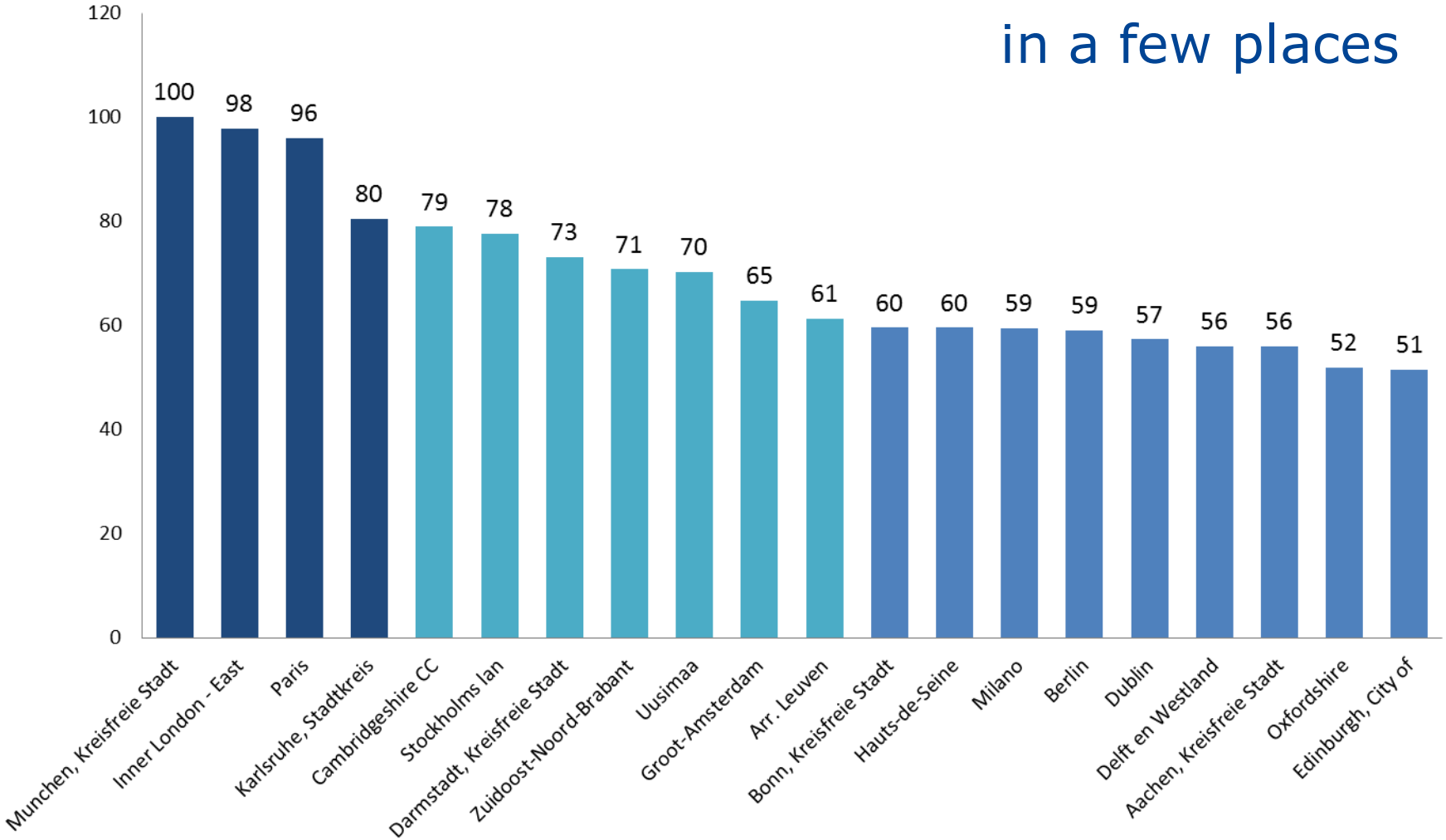
Results observations

EIPE Indicator
Final Ranking (> 50)

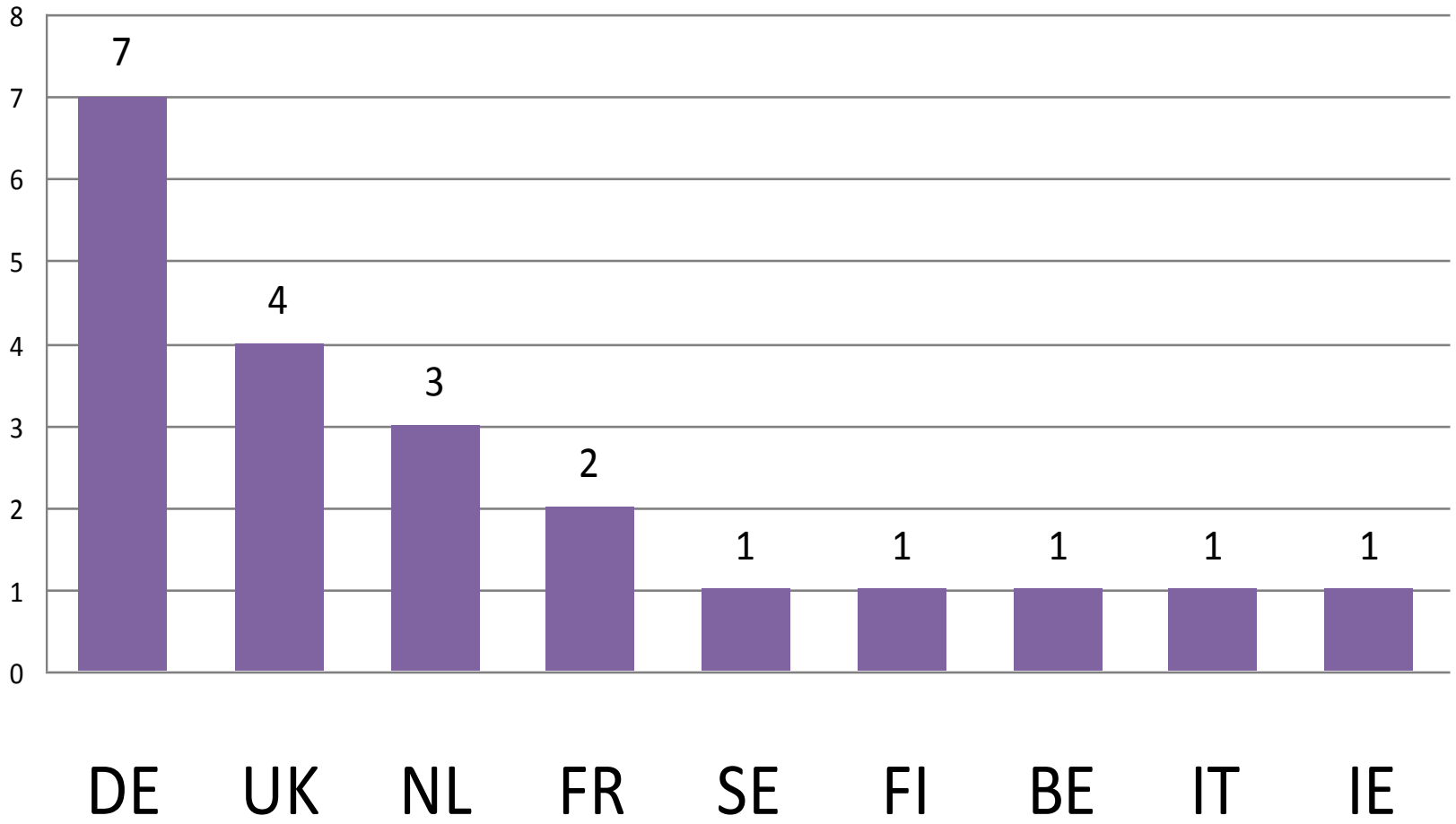


Concentrated in a few places

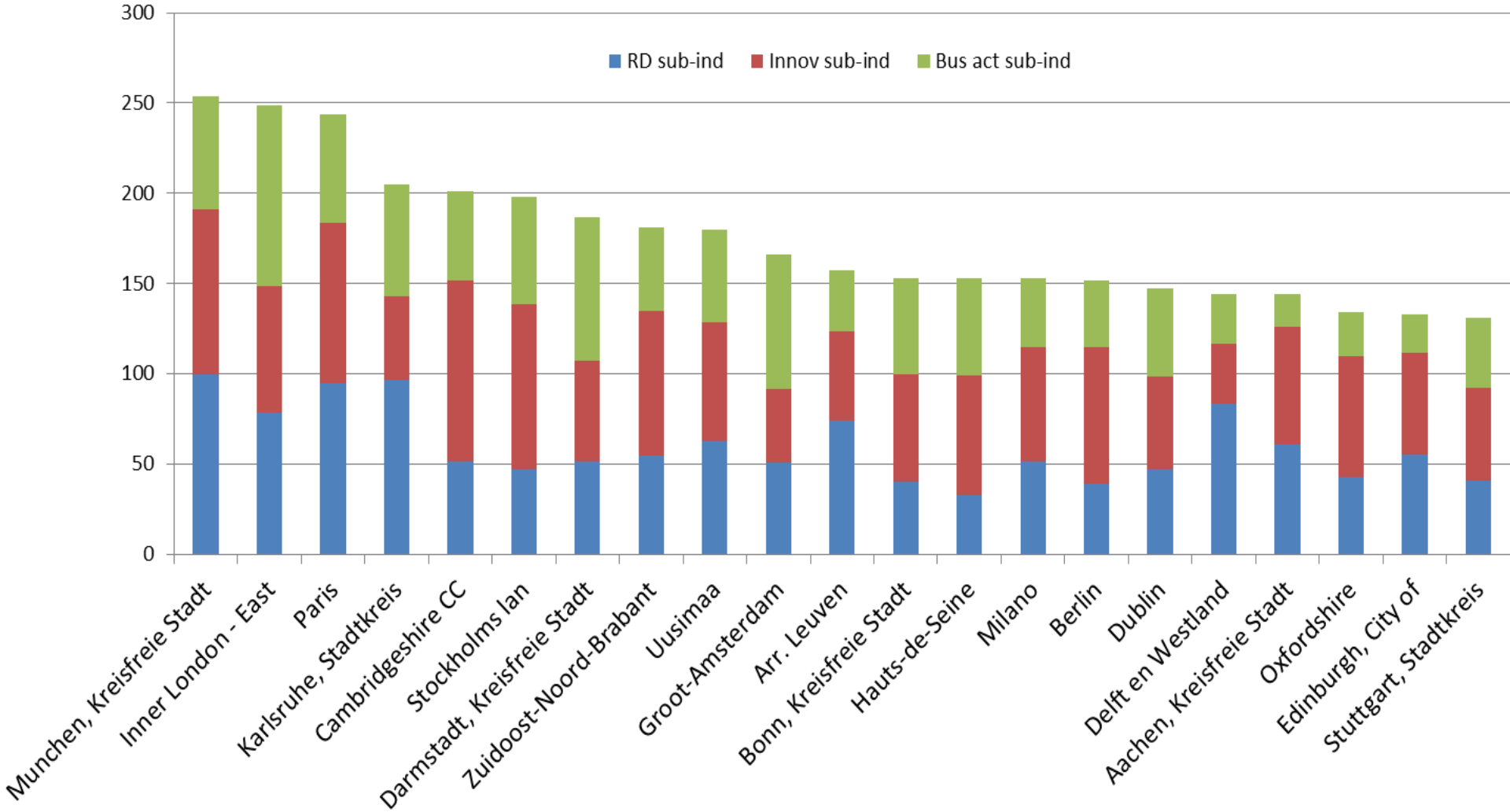
Results observations

EIPE Indicator
Final Ranking (> 50)

Concentrated
in a few COUNTRIES



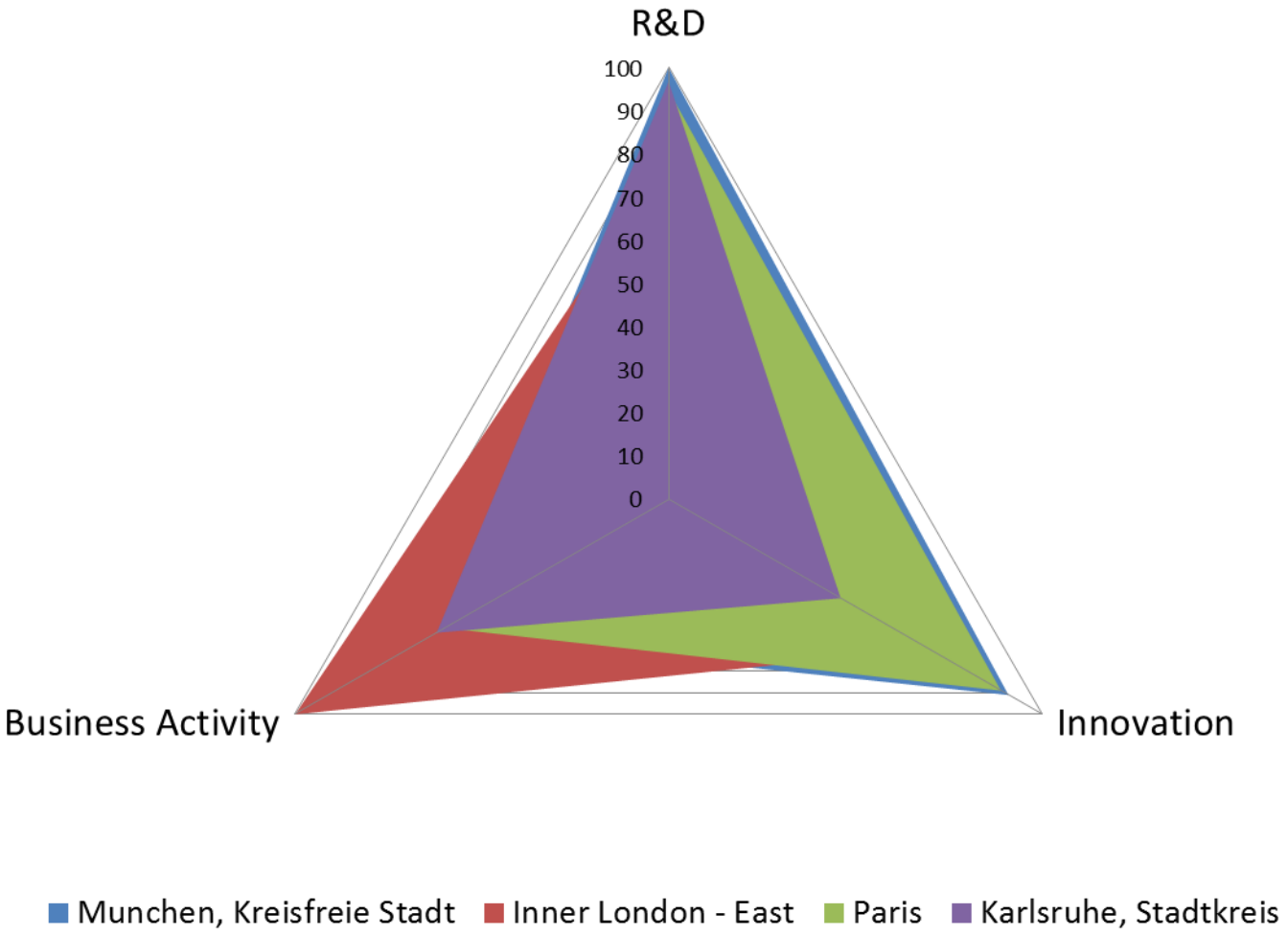
Results observations



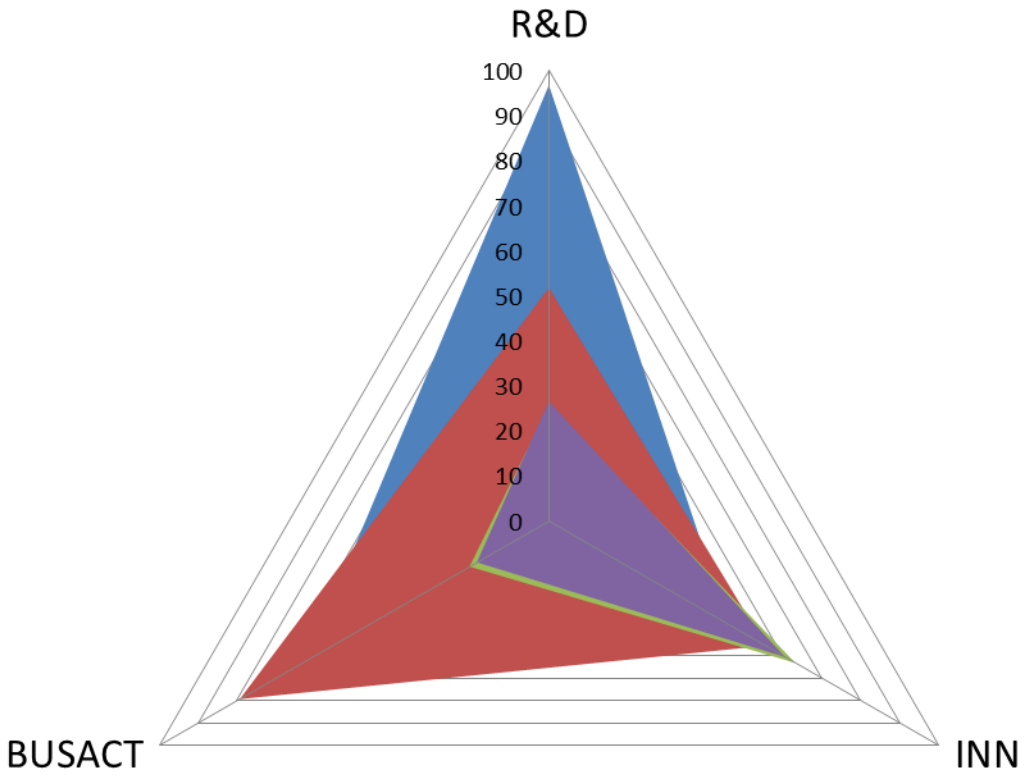
Despite concentration, diversity: different activities

Results observations

EIPE Top 4 (80 to 100)



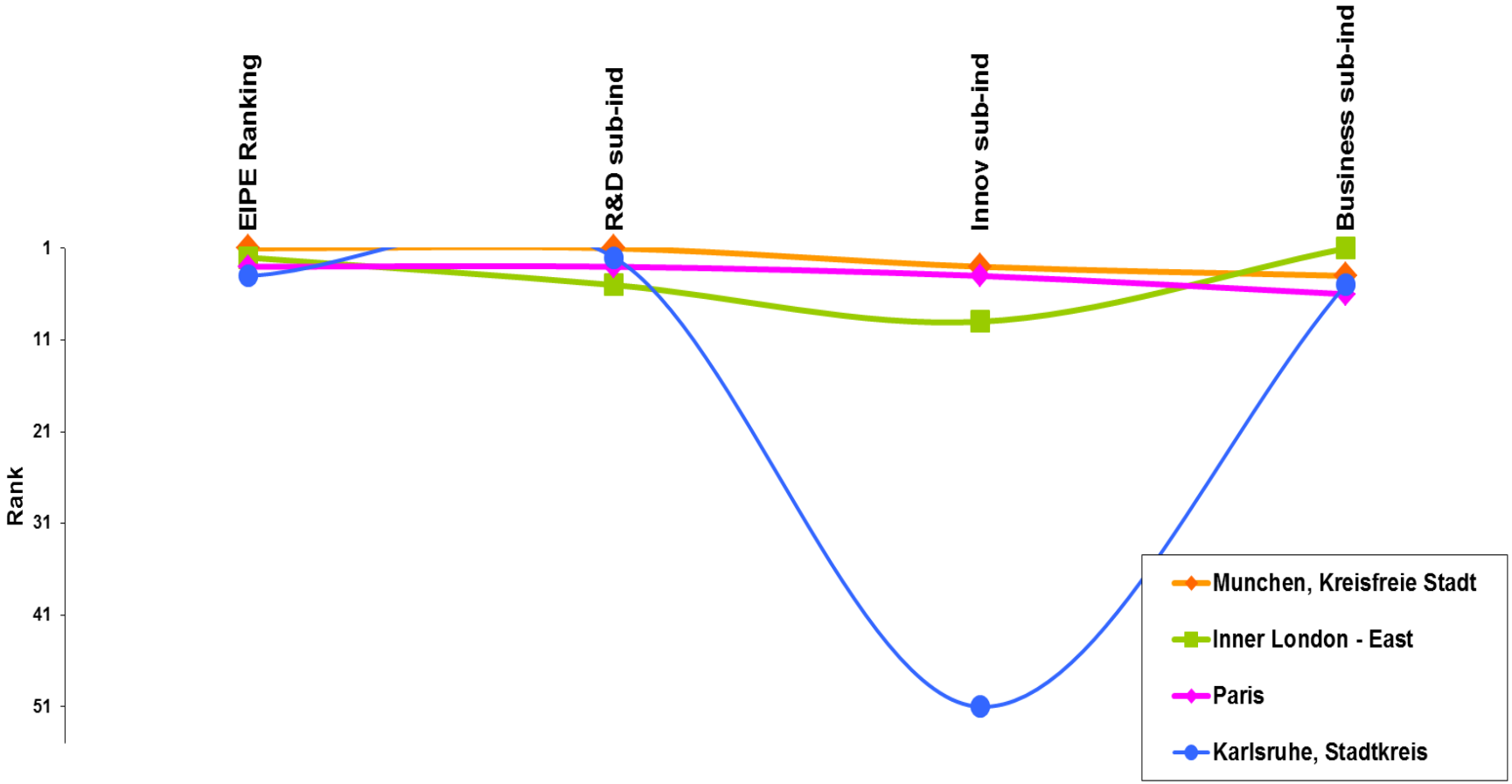
Results observations



Results observations

Excellence: the EIPE Top 4 (80 to 100)

Ranking in EIPE indicator and sub-indicators



Conclusions

What does the study demonstrate?

It is feasible today to observe the ICT (innovative) activity in Europe at a very fine-grain level with statistical data as initial input

BUT

-Accepting data limitations (no more than usual?)

-Calling upon big data-style analytics

-Resulting in rather abstract outputs

-That will never exhaustively answer all Q. No miracle.

In this study, we have identified and mapped EIPE and their hinterland, described their characteristics and tried to derive policy implications.

There is NO recipe to create an EIPE….

Main observations from the case studies

Very strong concentration:

- in terms of Location, Actors, Activities
- money follows, among others, performance

Intense cross-border R&D&I & business

- Intensive internationalisation of all types of activities
- However, one size does not fit all:
  - Internationalisation of each activity follows different pattern
  - Each region has a different portfolio of partners
  - Some show more local orientation (within the EU), while others have far reaching connections (US & Asia)

Complex web of connections

- different network structures emerging for activities, locations,
- with various roles, positions, …

Thank you!

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And thanks to *Jean Paul* for presenting

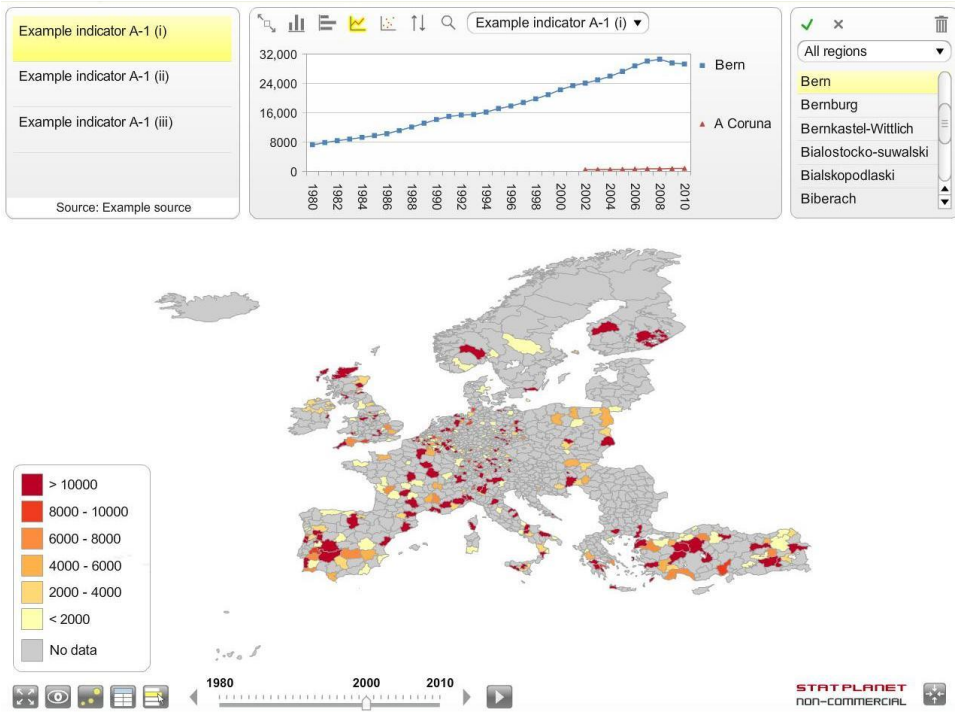
References: De Prato, G., Nepelski, D., (2013)

- ***Measuring EIPE: framework, indicators, data source and methods***, **EIPE Working paper 2, JRC Technical Reports.**
- ***Defining European ICT Poles of Excellence: A Literature Review***, **EIPE Report 1,**
- ***Identifying European ICT Poles of Excellence: The Methodology***, **EIPE Report 2,**
- ***The Atlas of the ICT Activity in Europe***, **EIPE Report 3.**
- ***Zooming-in at the European ICT landscape. Case studies of Inner London East, Paris,Kreisfreie Stadt Darmstadt, Dublin and Byen Kobenhavn***, **EIPE Report 4.**

Available at:
http://is.jrc.ec.europa.eu/pages/ISG/EIPE.html

The results are going to be presented in:

- The ATLAS
- The online mapping tool



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