



CHEITA

Global Benchmarking and the Complexity Index

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BencHEIT Task force meeting
Barcelona 13/11 2015



- What is CHEITA
- What is the CHEITA Benchmarking Project
- What is the Complexity Index
- Next Steps



CHEITA Benchmarking Group Members

Organization	Name	Title
Council of Australian University Directors of Information Technology (CAUDIT)	Paul Sherlock	CIO, University of South Australia
	Anne Kealley	CEO, CAUDIT
Cineca (Italy)	Michele Mennielli	External Relations and International Affairs Manager
Canadian University Council of Chief Information Officers (CUCCIO)	Lori MacMullen	Executive Director
EDUCAUSE (US)	Leah Lang	Director of Analytics Services
	Pam Arroway	Director of Analytics Infrastructure
	Karen Wetzel	Program Manager, ECAR Working Groups
	Eden Dahlstrom	Director of Research
EUNIS (Europe)	Johan Bergström	Head of International Cooperation
	Pekka Kähkipuro	Director of IT, Aalto University
	Ilkka Siissalo	CIO and Director of Information Technology, University of Helsinki
	Teemu Seesto	IT secretary of FUCIO Network of Finnish Universities' Chief IT Officers
UCISA (UK)	Peter Tinson	Executive Director
Zentren für Kommunikation und Informationsverarbeitung e.V. (Germany)	Markus von der Heyde	CIO - Surveys



CHEITA Benchmarking Project Goals

- Provide a method or process to identify international peer institutions
 - Explore the Complexity Index as a possible approach to comparing institutions internationally
 - Develop an international Complexity Index for benchmarking
- Develop a small set of metrics which can be used to benchmark internationally (to be confirmed).



NATIONAL AND REGIONAL BENCHMARKING MODELS





THE CHEITA GLOBAL COMPLEXITY INDEX



ORIGINS

- CAUDIT developed the complexity index approach to benchmarking in 2007
- A tool to find peers other than “traditional” models
- Outliers are easily identified resulting in improved data quality
- Peers are easily identified to guide deeper benchmarking
- Use spread to Canada and South Africa



INPUTS

- CAUDIT CI uses Staff FTE, Student EFTSL, research income and geography (number and size of sites) as inputs
- Largely based on publicly accessible data - not reliant on the CIO to collect the data
- CHEITA CI needed to be modified to exclude geography because this data was not easy to collect across all countries



The CHEITA Global Complexity Index

	Min	Max
Number of students (EFTSL)	0	45,000
Number of staff (FTE)	0	18,000
Research income (\$)	0	\$750,000,000

$$\text{eftsl_ind} = \min(10, 1 + 9 * (\text{student EFTSL} / 45,000))$$

$$\text{fte_ind} = \min(10, 1 + 9 * (\text{staff FTE} / 18,000))$$

$$\text{res_ind} = \min(10, 1 + 9 * (\text{research income} / 750,000,000))$$

$$\text{comp_ind} = \text{eftsl_ind} * .35 + \text{fte_ind} * .35 + \text{res_ind} * .30$$



CALCULATION METHOD

1. Obtain the raw measurement
2. Scale the raw measurement (using a linear algorithm) between 1 and 10 based on the max and min values for the “international” higher education sector
3. Apply a weighting to the scaled measurement based on the relative importance of the underlying measure (35% for students, 35% for staff, and 30% for research income).
4. Add up the 3 weighted measurements to get the final result

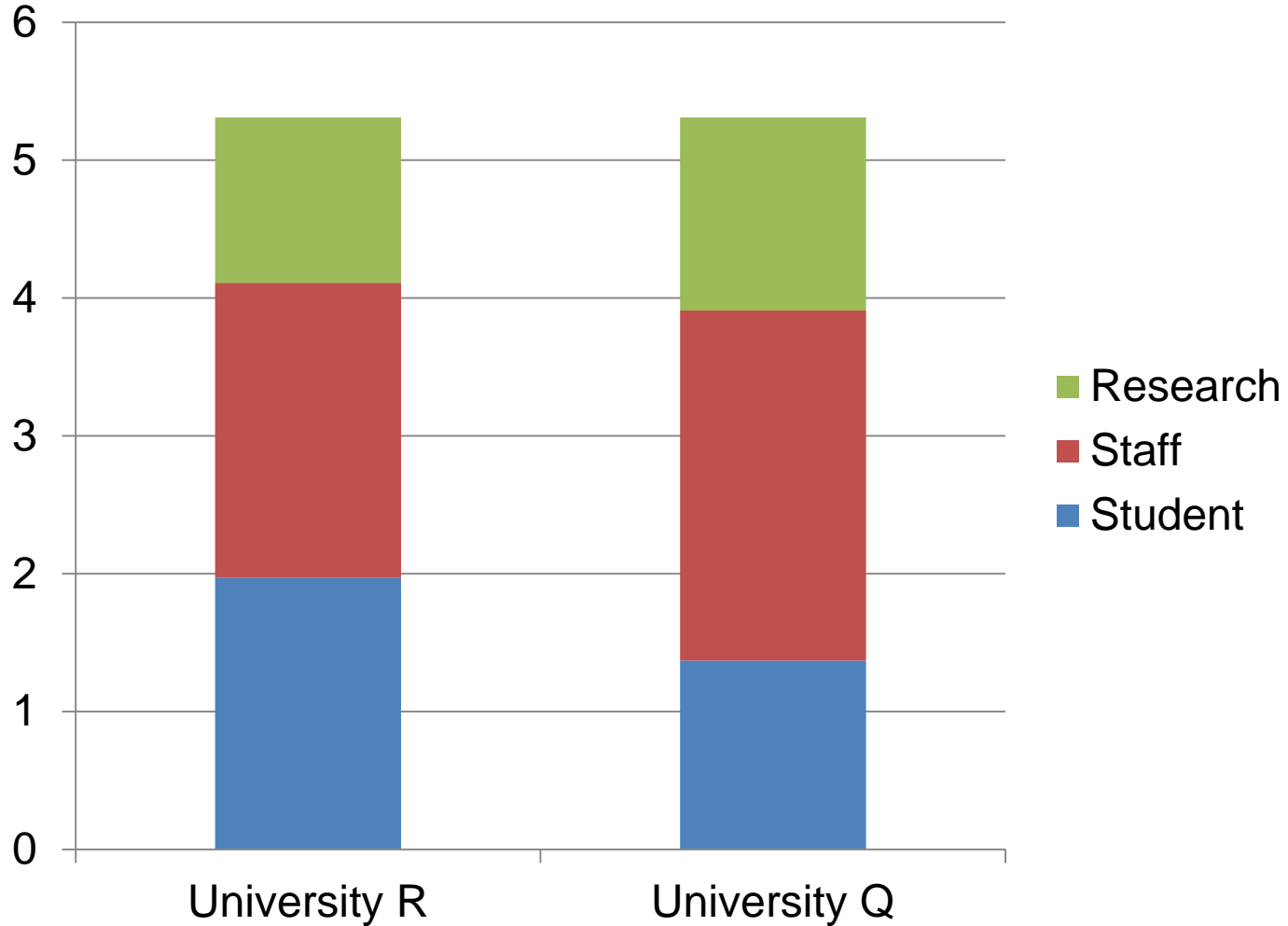


AN EXAMPLE (University R)

1. Student EFTSL=21,378, Staff FTE = 10,235, Research Income = \$450,000 USD
2. Using max = 45,000 and min = 0 University R's scaled student EFTSL is 5.27.
3. The weighted student EFTSL is 35% of 5.27 = 1.85.
4. Repeat for staff FTE using max = 18,000 and weighting = 35%. Scaled staff FTE = 2.14
5. Repeat for research income using max = \$750,000 USD and weighting = 30%. Scaled research income = 1.92
6. Global CI = 1.85 + 2.14 + 1.92 = 5.91



University R & Q





CURRENCY CONVERSION

- CAUDIT experience comparing expenditure between Australia and New Zealand showed that a simple currency conversion is not appropriate
- Alternative method needed
- Better to use Purchasing Power Parity (PPP) to normalize the financial data - research income and institutional IT spend



BENEFITS OF THE GLOBAL COMPLEXITY INDEX

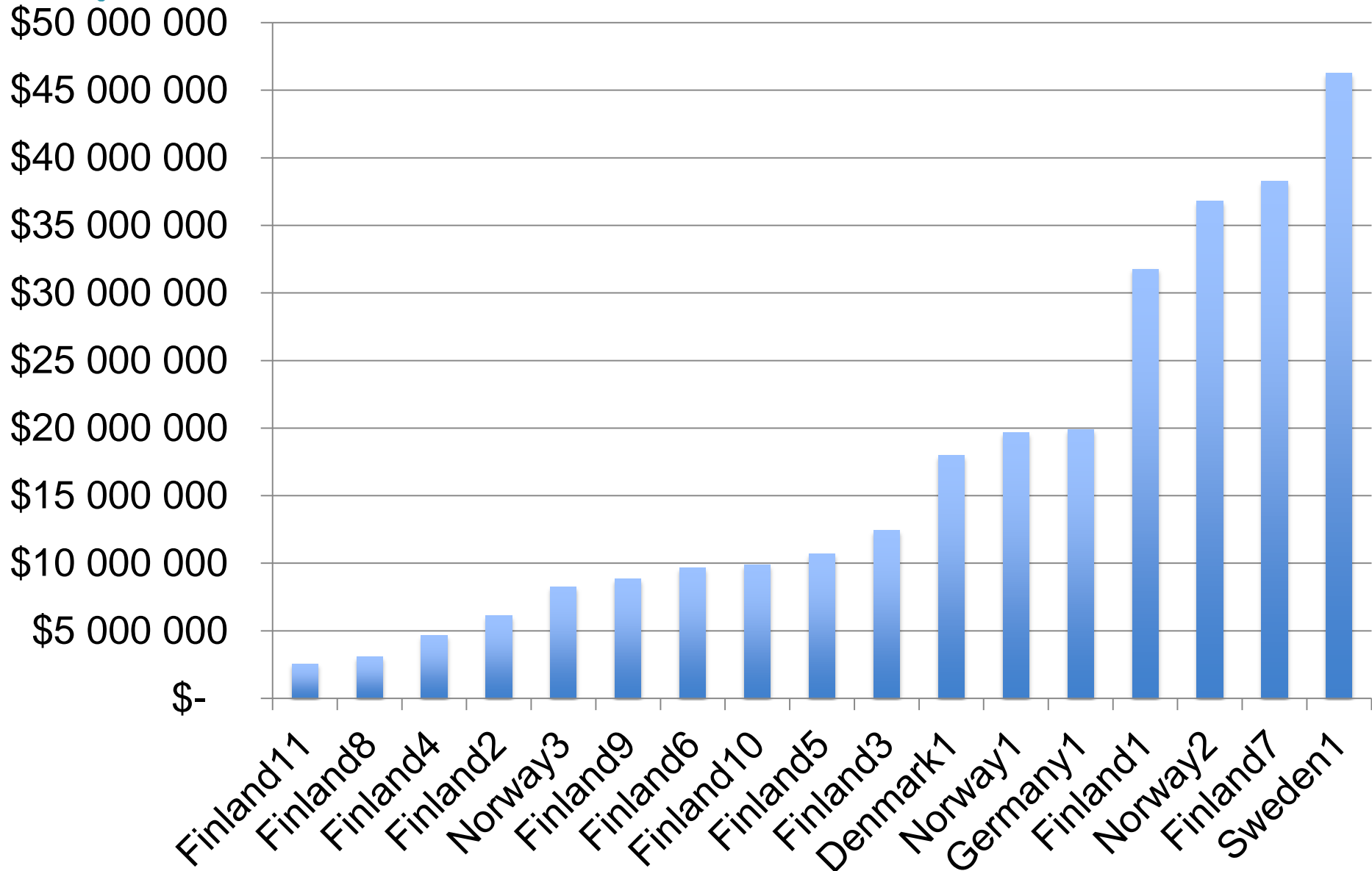
- Based on the CAUDIT index, which is already used in Australia and New Zealand, Canada, and South Africa.
- The calculation and use of the index is relatively simple and straightforward.
- Based largely on publicly available data
- Based on stable institutional measures rather than technology measures
- Can readily identify members of peer groups that can undertake deeper benchmarking.
- Can be used in parallel with other classification approaches to further refine large peer groups.
- Can be used to improve data quality - outliers become very obvious



PROOF OF CONCEPT

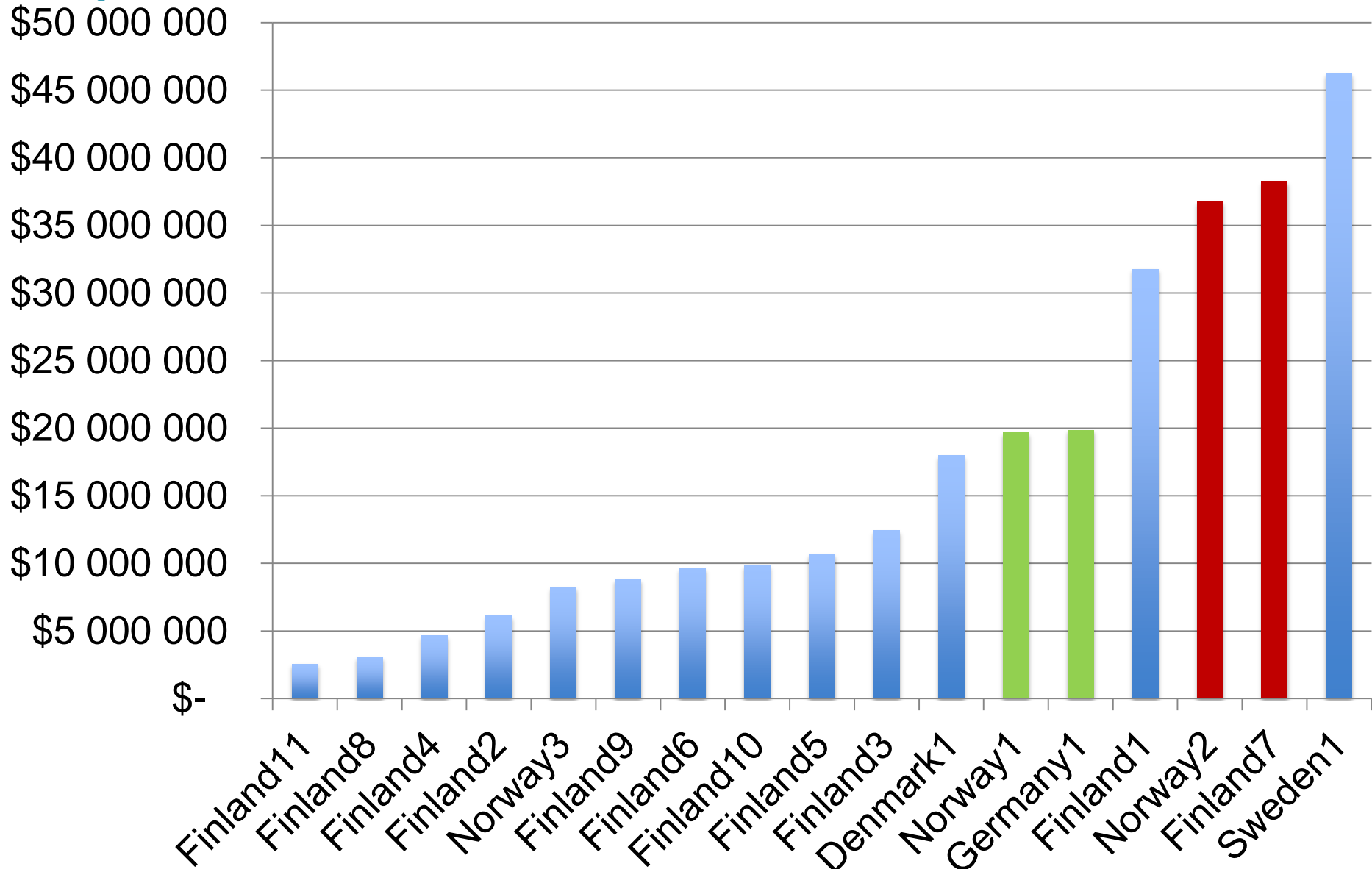


Total IT Spend (USD)





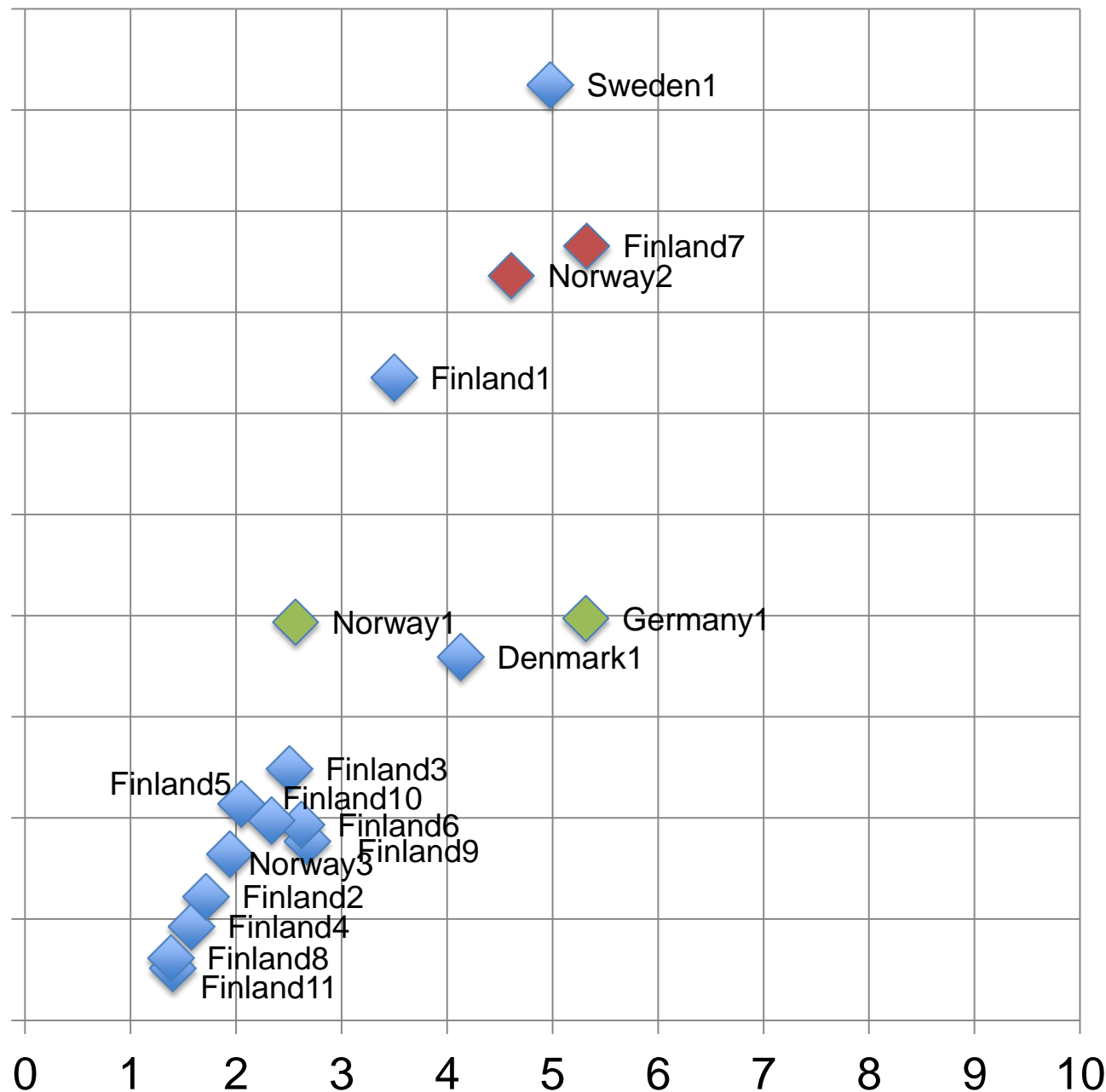
Total IT Spend (USD)





Total IT Spend (USD)

\$50 000 000
\$45 000 000
\$40 000 000
\$35 000 000
\$30 000 000
\$25 000 000
\$20 000 000
\$15 000 000
\$10 000 000
\$5 000 000
\$-

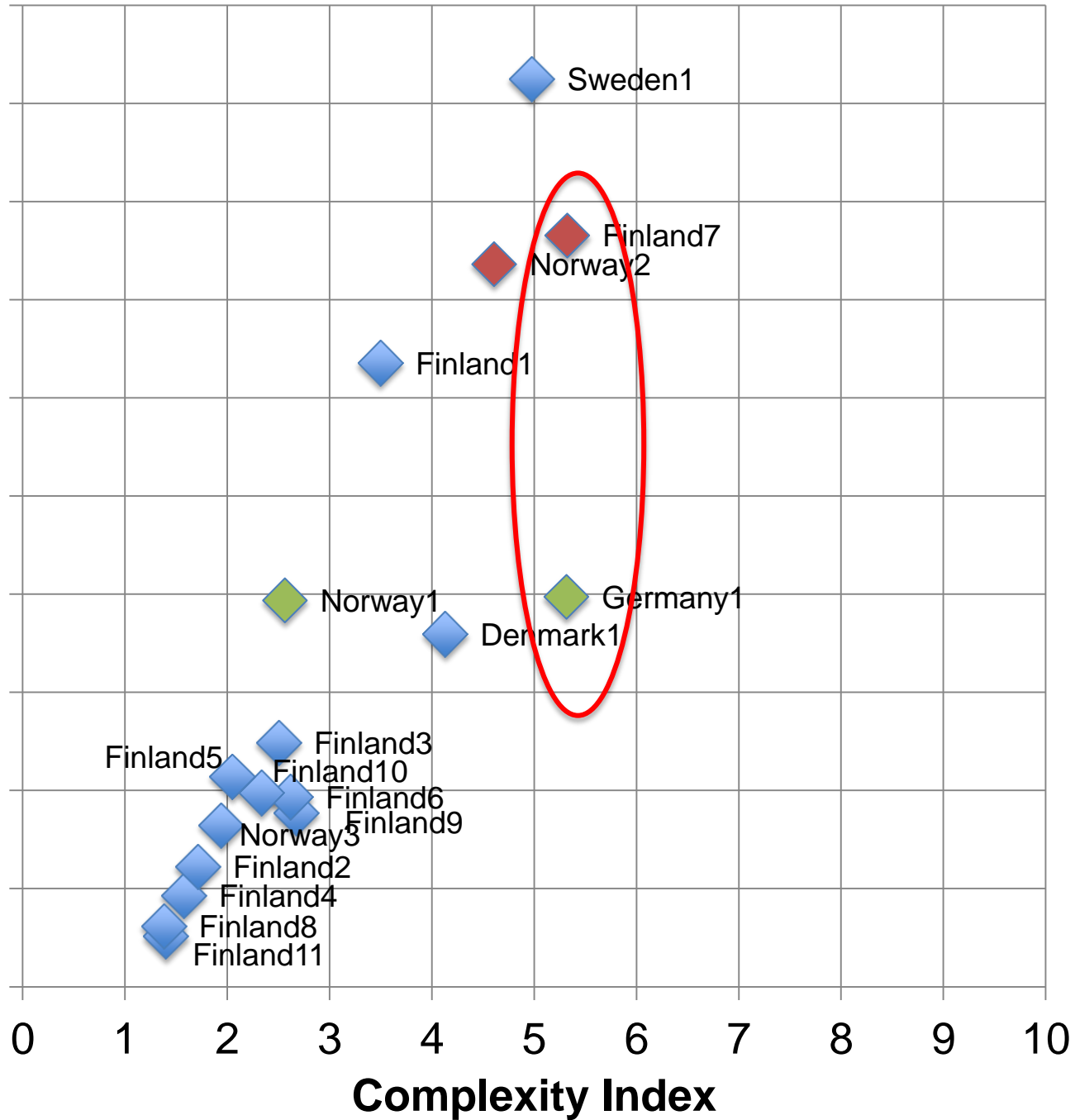


Complexity Index



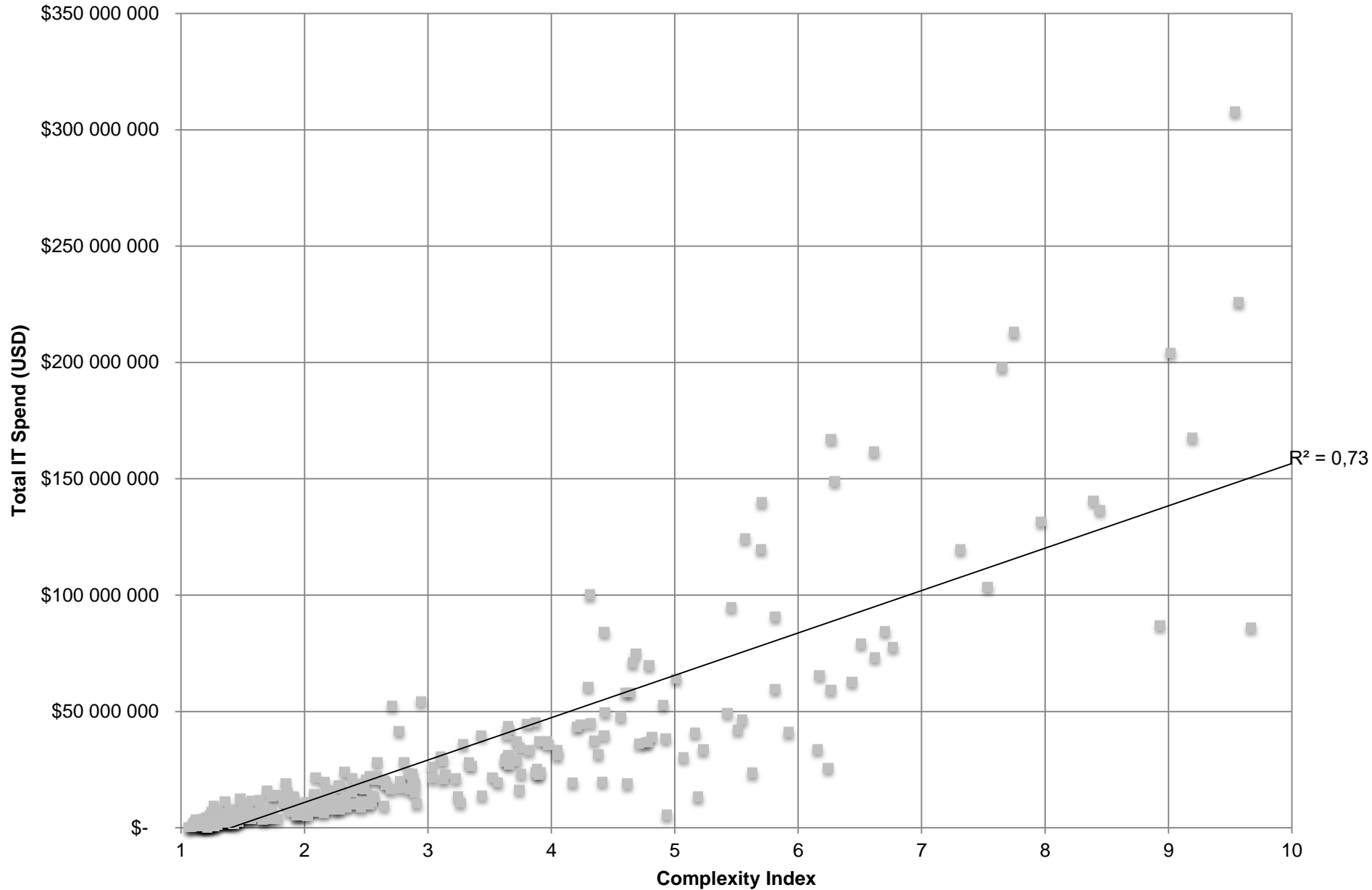
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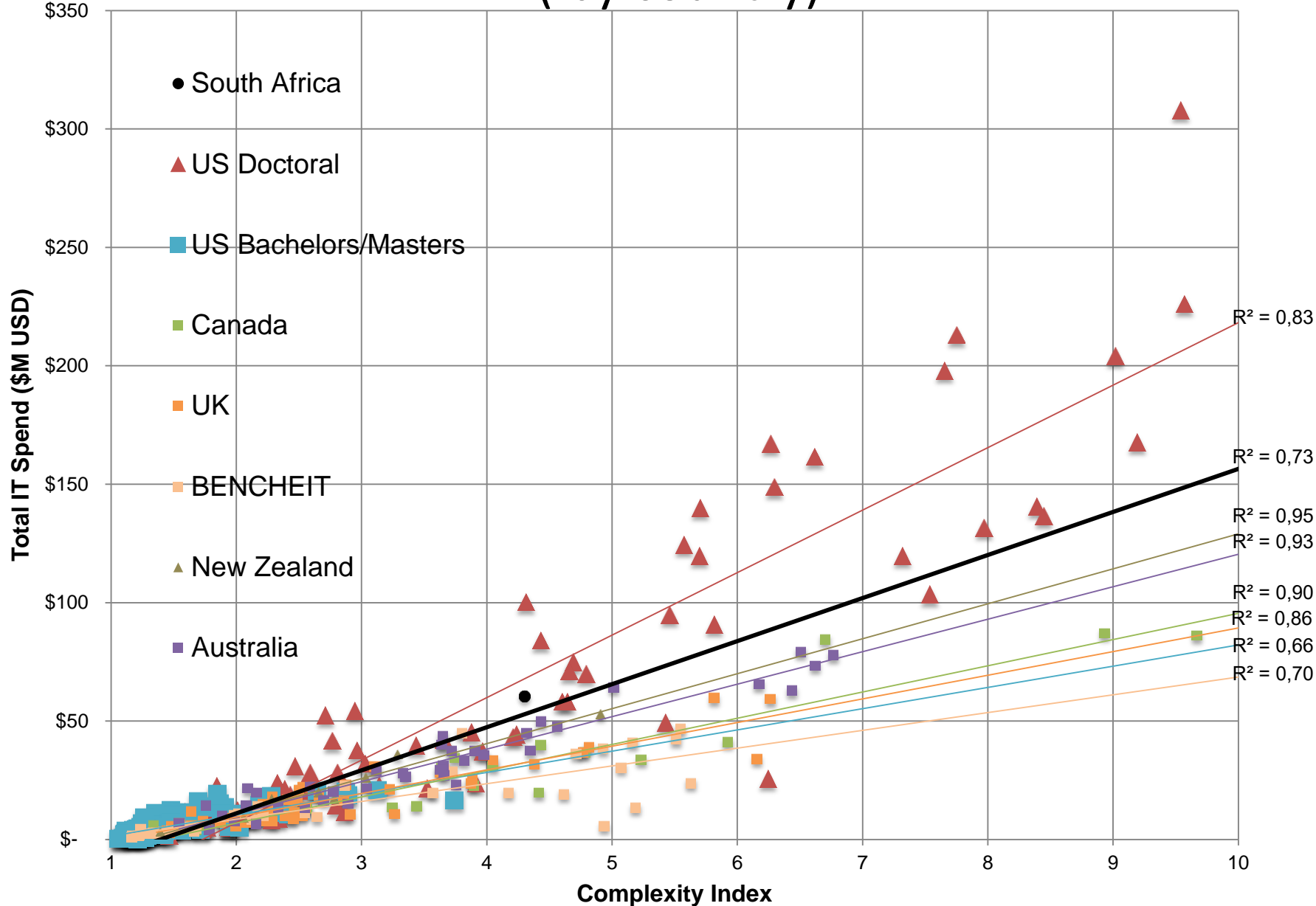


Total IT spend (USD) v complexity index





Total IT spend (USD) v Complexity (by country)





How to use?

- Running the survey:
 - Outliers – good and bad
 - Find ways to identify data errors
- For insitiutions
 - It's all about the conversation



Possible Next Steps

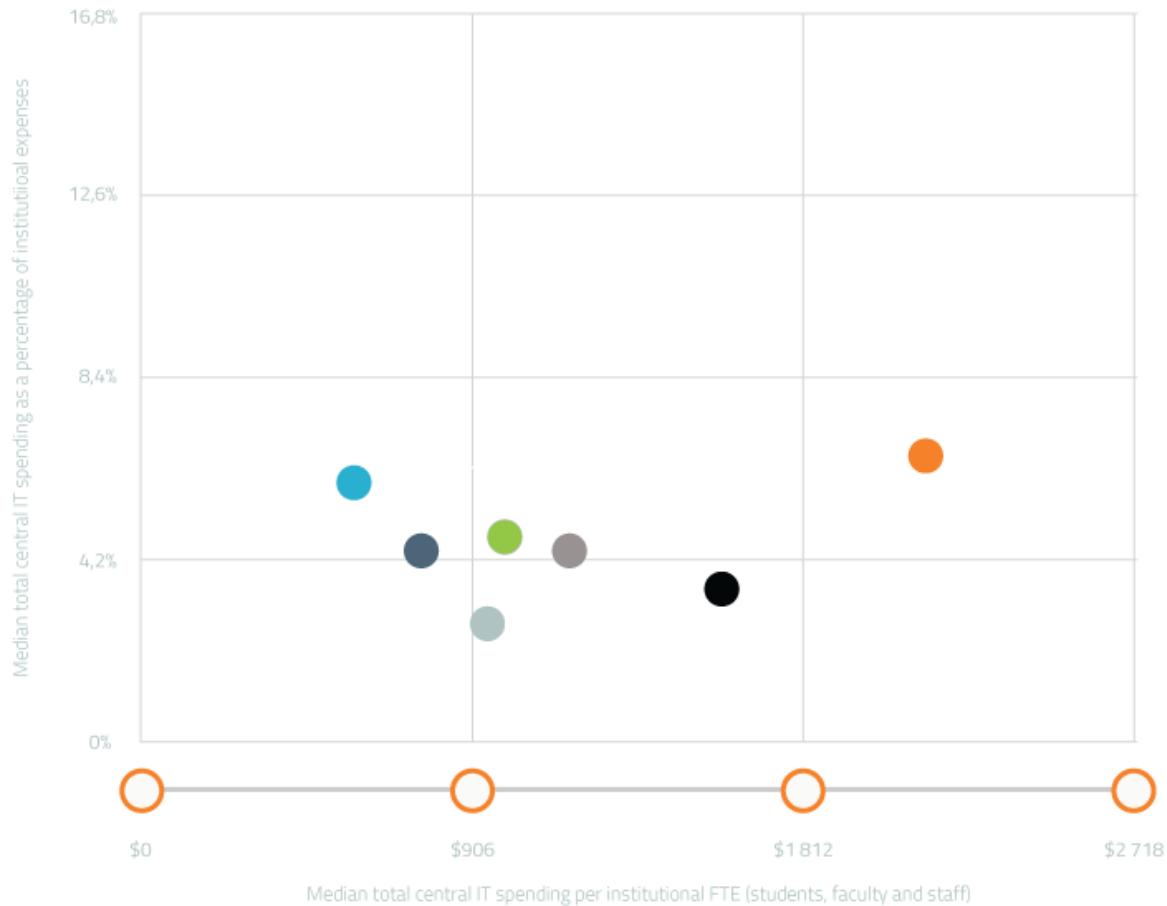
- Identify a set of comparator institutions and through participation in a virtual workshop investigate data quality, appropriateness of the model, etc.
- Based on the outcome of these discussions possible next steps include
 - refining the methodology and the model
 - encouraging broader participation
 - developing a small set of metrics for additional international benchmarking



Further information

- CHEITA website: www.cheita.org
- Benchmarking IT: A Global approach <http://tinyurl.com/nrz42bk>
- Cheita Global Complexity Index Calculator

CDS - BENCHEIT COMPARISON



AA	\$599	5.9%
MA public	\$768	4.4%
DR public	\$941	3.2%
MA priv	\$979	4.7%
BA	\$1 129	4.4%
DR priv	\$1 629	3.7%
BencHEIT	\$2 117	6.0%

ERAI – a knowledge platform

ERAI

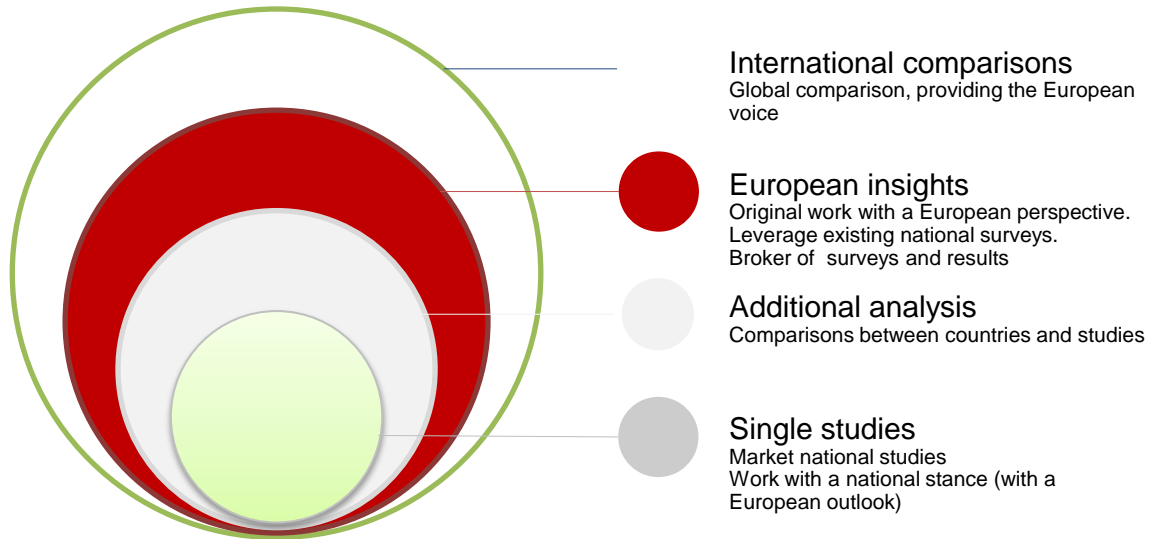
- +Eunis Research and Analysis Initiative
- +Knowledge Sharing platform
- +Network organisation

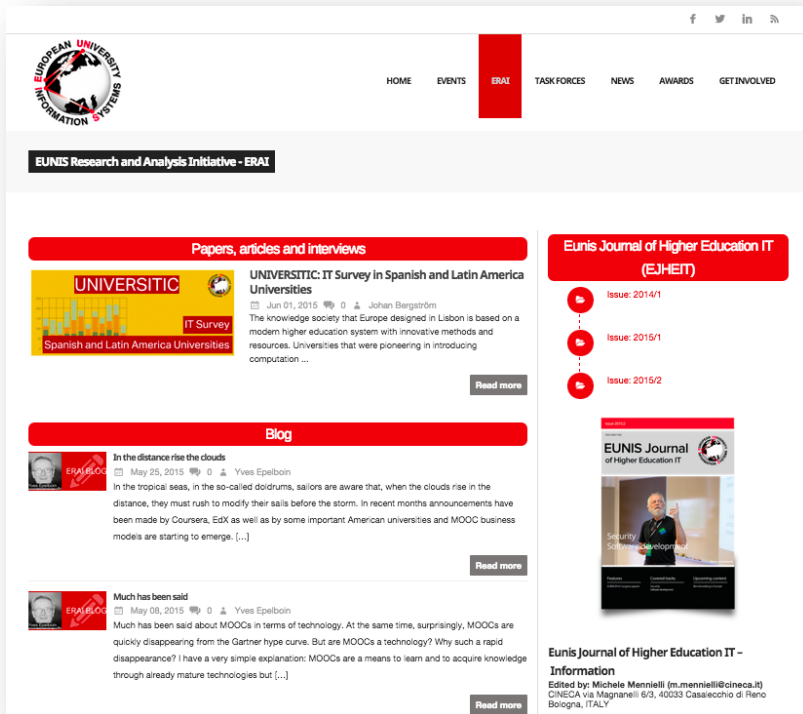
Part of EUNIS

- + Well established
- + Growing network
- + Pan European collaboration
- + Channel of contacts



Content creation





The screenshot shows the EUNIS website homepage. At the top left is the EUNIS logo, a globe with the text 'EUROPEAN UNIVERSITY SYSTEM INFORMATION SYSTEMS'. To the right are navigation links: HOME, EVENTS, ERAI, TASK FORCES, NEWS, AWARDS, GET INVOLVED. Below the navigation is a red bar with the text 'EUNIS Research and Analysis Initiative - ERAI'. The main content area is divided into three sections: 'Papers, articles and interviews' featuring a survey titled 'UNIVERSITIC: IT Survey in Spanish and Latin America Universities' by Johan Bergström; 'Blog' with two articles, 'In the distance rise the clouds' and 'Much has been said', both by Yves Epelboin; and 'Eunis Journal of Higher Education IT (EJHEIT)' with a list of issues (2014/1, 2015/1, 2015/2) and a thumbnail for the 'Security Software development' issue.



The image shows a stack of three covers of the 'EUNIS Journal of Higher Education IT'. The top cover is 'Issue 2014:1' (ISSN 2409-1340) with the title 'EUNIS Journal of Higher Education IT' and the EUNIS logo. The middle cover is 'Issue 2014:2' (ISSN 2409-1340) with the title 'EUNIS Journal of Higher Education IT' and a photo of a man in a purple shirt. The bottom cover is 'Issue 2014:3' (ISSN 2409-1340) with the title 'EUNIS Journal of Higher Education IT' and a photo of a man with a beard pointing at a screen. The bottom cover also features a 'Features' section with the text 'EUNIS2014 Congress papers From the tracks: teaching and learning' and 'Covered tracks' including 'Security Software development'. The bottom cover also has a 'Features' section with the text 'EUNIS2014 Congress papers' and 'Upcoming content'.

