



UNIVERSITY RANKINGS AS SOURCES OF METRICS AND  
BENCHMARK TOOLS FOR CONTINUOUS IMPROVEMENT  
AT  
TÉCNICO LISBOA

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# • CONTEXT

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## 'Surge' in European mergers as universities seek rankings boost

Desire to climb global tables is bringing many institutions together – but there are risks, expert warns

February 3, 2018

David Matthews

Twitter: @DavidMJourn

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March 13, 2023 Feature Story

## Rankings tail wags the strategy dog

If the ARC's research metrics are abolished they will be replaced by commercially-motivated providers of league tables and research metrics – when other nations are working on new ways of assessment

by CAMERON NEYLON and JAMES WILSDON

WA vice-chancellors were knocked for six last week when the state government sprang a structural review on the sector. Its ostensible goal is to test the ground for a merger of four West Australian universities (Curtin, Edith Cowan, Murdoch and UWA) on the basis that a combined behemoth would somehow "rocket up global rankings".

The mooted merger is both an egregious example of the rankings tail wagging the strategic dog, and a symptom of a deeper malaise – the growing disconnect between Australia's conversation about research, rankings and the priorities of its university sector, and the far

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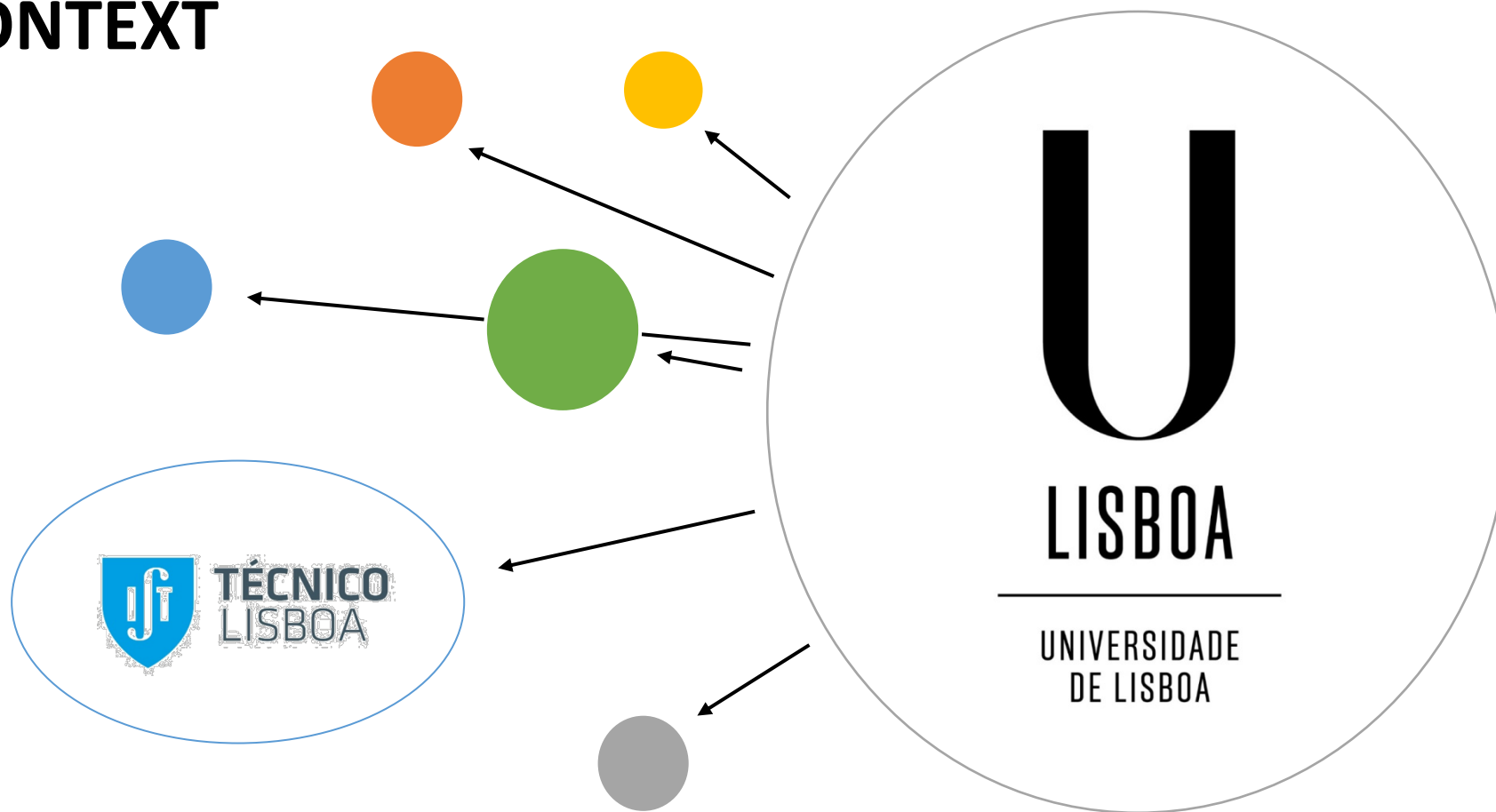
## How France overcame the odds to build a research mega-campus

The huge Paris-Saclay University has earned a top international ranking – but researchers say it's too soon to judge whether the model is a success.

Barbara Casassus



- **CONTEXT**





- **CHALLENGES AND OVERCOMING**

TÉCNICO LISBOA (TÉCNICO) IS NOT LISTED IN RANKINGS

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FOCUS ON SPECIALIZED RANKINGS IN ENGINEERING AND TECHNOLOGY, IN FIELDS AND SUBJECTS OFFERED BY TÉCNICO (QS & THE IN ENG).

WEIGHT/CONTRIBUTION/IMPACT OF TÉCNICO WITHIN THE UNIVERSITY OF LISBON (ULISBOA) FOR RANKING PURPOSES

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QUANTIFY, AS PRECISELY AS POSSIBLE, HOW MUCH TÉCNICO WEIGHS WITHIN THE FRAMEWORK OF ULISBOA (IN CERTAIN DIMENSIONS) AND UNDERSTAND HOW MUCH IT CONTRIBUTES TO ITS PERFORMANCE IN RANKINGS BY SUBJECT.

- **CHALLENGES AND OVERCOMING**

*HOW MUCH DOES TÉCNICO CONTRIBUTE TO ULISBOA?*

**SCIENTIFIC OUTPUT (BIBLIOMETRIC DATA)**

MEASURED THROUGH THE VOLUME OF PUBLICATIONS INDEXED IN SCOPUS

**VOLUME OF STUDENTS**

CORRESPONDS TO THE CURRENT NUMBER OF STUDENTS ENROLLED

**NOTE: THE SUBJECT AREAS IN WHICH THESE DIMENSIONS ARE CLOSE TO 100% ARE THOSE WHOSE TÉCNICO'S WEIGHT IS GREATER OR ALMOST EXCLUSIVE IN THE CONTEXT OF ULISBOA.**

# • OVERCOMING CHALLENGES

## • SCIENTIFIC OUTPUT (BIBLIOMETRIC DATA)

SCOPUS BROAD FIELD	NO. OF SCOPUS-INDEXED PUBLICATIONS (2015-2019)		WEIGHT % (IST/UL)
	TÉCNICO	ULISBOA	
Mathematics	1035	1180	87.7
Engineering	3502	4106	85.3
Materials science	1844	2216	83.2
Energy	1025	1305	78.5
COMPUTER SCIENCE	1180	1650	71.5
Physics & Astronomy	2735	3871	71.1
CHEMICAL ENGINEERING	899	1356	66.3
CHEMISTRY	1459	2145	60.4
Environmental Sciences	1241	3246	38.2
EARTH & PLANETARY SCIENCES	529	1918	27.6

# • OVERCOMING CHALLENGES

## • VOLUME OF STUDENTS

DATA RETRIEVED FROM THE PORTUGUESE GENERAL ADMINISTRATION FOR EDUCATION AND  
SCIENCE STATISTICS CLASSIFICATIONS

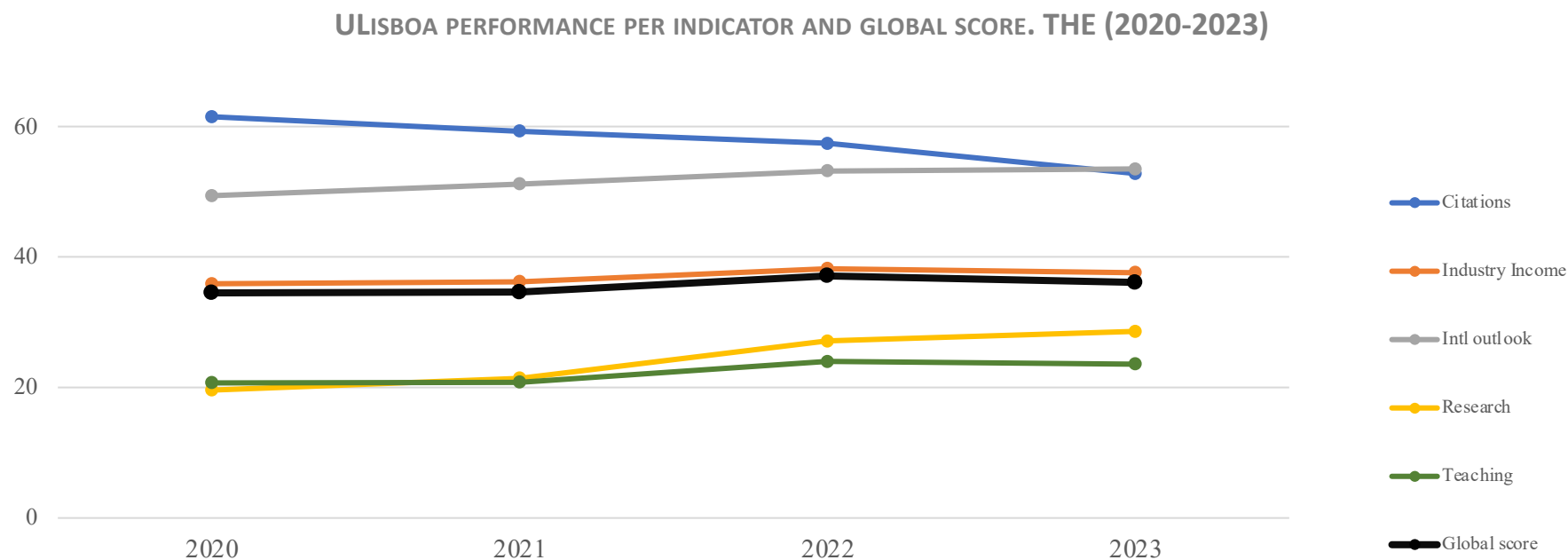
SUBJECT AREAS	NATURAL SCIENCES, MATHS & STATISTICS	ENGINEERING, MANUFACTURING AND CONSTRUCTION INDUSTRIES	INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)
TÉCNICO	1130	9624	130
ULISBOA	4820	13080	326
PERCENTAGE OF STUDENTS OF TÉCNICO WITHIN ULISBOA	23.5%	73.6%	39.9%

**NOTE: THIS EXAMPLE OF TRYING TO MEASURE THE ‘WEIGHT’ OF A SPECIALIZED INSTITUTION IN THE  
CONTEXT OF ITS PARENT UNIVERSITY (AS A RESULT OF A MERGER) COULD BE APPLIED BY OTHER SCHOOLS**



# • APPLICABILITY OF RANKINGS

## • ANALYSIS AND INSTRUMENTALIZATION OF INDICATORS AND SCORES





# • APPLICABILITY OF RANKINGS

## • ANALYSIS AND INSTRUMENTALIZATION OF INDICATORS AND SCORES

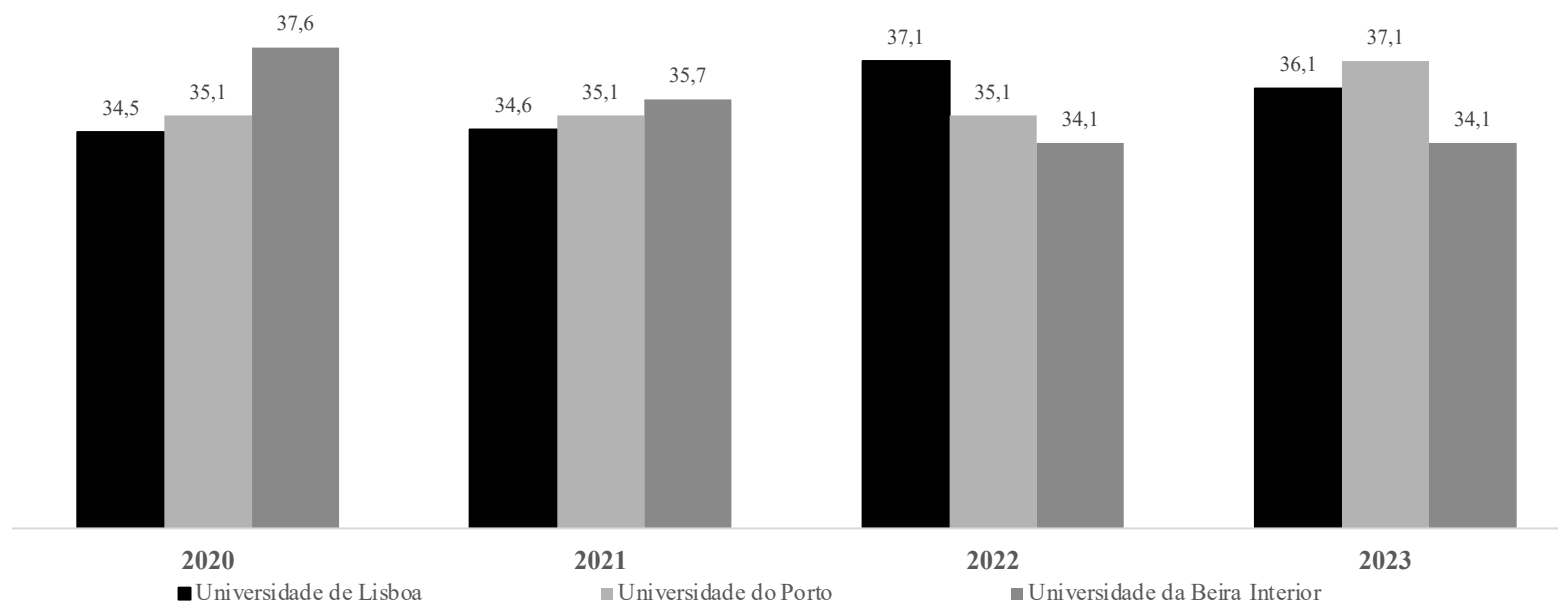
A HYPOTHETICAL APPROACH BY APPLYING A GROWTH % TO THE CURRENT RESULTS OF ULISBOA

CURRENT SCENARIO	GLOBAL SCORE	CITATIONS	INDUSTRY INCOME	INTERNATIONAL OUTLOOK	RESEARCH	TEACHING	GLOBAL SCORE	RANKING POSITION
ULISBOA SCORE*	36,1	52,8	37,6	53,5	26,3	23,6	36,1	141
POTENTIAL SCENARIO	GLOBAL SCORE	CITATIONS	INDUSTRY INCOME	INTERNATIONAL OUTLOOK	RESEARCH	TEACHING	POTENTIAL GLOBAL SCORE	POTENTIAL RANKING POSITION
A) 5% INCREASE - ALL	-	55,4	39,5	56,2	27,6	24,8	37,2	132
B) 10% INCREASE - ALL	-	58,1	41,4	58,9	28,9	26	38,9	120
C) 10% INCREASE IN RESEARCH & TEACHING	-	52,8	37,6	53,5	28,9	26	36,9	134

\*LATEST EDITION (2023) OF THE RANKING THE IN ENGINEERING

# • THE BENCHMARKING APPROACH: NATIONAL

EVOLUTION OF GLOBAL SCORE FOR THE PORTUGUESE TOP 3 HEIS. THE (2020-2023)



- **THE BENCHMARKING APPROACH: NATIONAL**

	ANNUAL MEAN VARIATION 2019 – 2023 (%)		POTENTIAL SCENARIO 2024	
	ULISBOA	UPORTO	ULISBOA	UPORTO
CITATIONS	-3,1	2,1	51,2	59,2
INDUSTRY INCOME	2,7	1,3	38,6	39,6
INTERNATIONAL OUTLOOK	3,7	2,5	55,5	51,6
RESEARCH	8,2	10,9	28,5	27,5
TEACHING	2,6	4,5	24,2	27,8
GLOBAL SCORE	1,7	4,1	36	38,7

THE POTENTIAL SCENARIO FOR 2024 ALLOWS INSTITUTIONAL GOVERNING BODIES TO ANTICIPATE AN ESTIMATE IF THE PERFORMANCE KEEPS THE PATTERN OF RECENT YEARS;  
IT MAY ALSO CONTRIBUTE TO IDENTIFY PRIORITY AREAS OF INTERVENTION



- **THE BENCHMARKING APPROACH: INTERNATIONAL**

RANK (EUROPE)	RANK (WORLD)	INSTITUTION	CITATIONS	INDUSTRY INCOME	INTERNATIONAL OUTLOOK	RESEARCH	TEACHING	GLOBAL SCORE
11	50	KULEUVEN	72.4	96.9	73.7	67	57.7	67.7
12	53	KTH	67.3	64.9	47.2	74.1	72.3	66.2
15	64	KIT	62.6	64.7	81.2	68	65.1	53.7
16	74	POLITO	66.7	57.3	55	57.5	59.1	60.3
28	108	AALTO UNIV	77.4	53.1	74.9	37.7	45.4	54.5

141	452	ULisboa	52.8	37.6	53.5	28.6	23.6.	36.1
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\* LATEST EDITION (2023) OF THE RANKING THE IN ENGINEERING.  
**CLUSTER NETWORK INSTITUTIONS CONSIDERED.**



- **KEY TAKEAWAYS**

- UNIVERSITY RANKINGS CAN BE A MEANINGFUL PROXY TO MEASURE INSTITUTIONS' QUALITY;
- SPECIALIZED INSTITUTIONS CAN MEASURE THEIR WEIGHT WITHIN THE CONTEXT OF ITS PARENT UNIVERSITY BY APPROXIMATION BY LOOKING AT SPECIFIC DIMENSIONS;
- TÉCNICO'S RANKING ANALYSIS SHOULD FOCUS MAINLY ON ENG&TECH RANKINGS;
- ANALYSIS OF RANKING INDICATORS AND SCORES ARE RELEVANT TO STIMULATE A QUALITY CULTURE THROUGH IDENTIFYING UNDERPERFORMING DIMENSIONS/INDICATORS AND BENCHMARKING;
- BECAUSE RANKING MONITORING AND ANALYSIS IS RECENT AT TÉCNICO, VISIBLE IMPACT WILL TAKE TIME; NEVERTHELESS, RANKINGS HAVE GAINED AWARENESS AMONG TÉCNICO'S BOARD MEMBERS AND THEY HAVE MADE THEIR WAY INTO THE STRATEGIC OPTIONS FOR THE NEXT 10 YEARS.



TÉCNICO LISBOA