

0

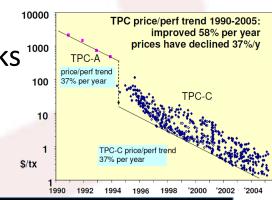
# Linked Data Benchmark Council 2.5-year status report

Peter Boncz



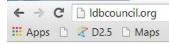
# Why Benchmarking?

- make competing products comparable (quantify)
  - E.g. make the case for graphDB vs RDBMS
  - measure progress in versions/products
- accelerate progress, make technology viable
  - Maturing RDF systems
  - Maturing property graph systems
  - Maturing graph programming frameworks





### Idbcouncil.org





BENCHMARKS » INDUSTRY » PUBLIC » DEVELOPER »

#### BENCHMARKS

Here you may find the results for different benchmarks, i.e. the Social Network Benchmark (SNB) and the Semantic Publishing Benchmark (SPB), their definitions and best practices, the repositories where to find the data generators and the query implementations, an access to the intranet for the LDBC industry partners and a list of the LDBC member vendors.

8

#### READ MORE

LDBC official benchmarks for industry



Semantic Publishing Benchmark (SPB) Why LDBC?

What are Graph Database systems? What are RDF Database systems? Why is benchmarking valuable? What is the mission of LDBC? The benchmarking



53

Ξ

community

Test the SPB and/or contribute to it Test the SNB and/or contribute to it



## LDBC: what systems?

#### Benchmarks for:

- Graph Database systems
  - Neo4j, SparkSee, InfiniteGraph, ...
- RDF stores (SPARQL speaking)
  - Virtuoso, GraphDB, BlazeGraph, Allegrograph,...
- Graph Programming Frameworks
  - Giraph, Green Marl, Grappa, GraphLab,...
- Relational Database systems



### Industry Membership









\*Sparsity









## What is LDBC doing now?

T<mark>wo main "tas</mark>k forces":

- Semantic Publishing Benchmark (SPB)
  - BBC use case RDF oriented
  - New version 2.0 with extended ontologies
- Social Network Benchmark (SNB)
  - Interactive workload (ready)
  - BI workload (almost draft)
  - Graph algorithms workload

#### See: github.com/LDBC



# What is LDBC doing now?

#### Three main "task forces":

- Semantic Publishing Benchmark (SPB)
  - BBC use case RDF oriented
  - New version 2.0 with extended ontologies
- Social Network Benchmark (SNB)
  - Interactive workload (ready)
  - BI workload (almost draft)
- SNB Analytics Benchmark
  - Graph algorithms workload (graphalytics)
  - Partnering with TU Delft / Oracle Labs

#### See: github.com/LDBC



## SNB: Workloads

- Interactive: tests a system's throughput with relatively simple queries with concurrent updates
  - Show all photos posted by my friends that I was tagged in
- Business Intelligence: consists of complex structured queries for analyzing online behavior
  - Influential people the topic of open source development?
- Graph Analytics: tests the functionality and scalability on most of the data as a single operation
  - PageRank, Shortest Path(s), Community Detection
  - → GRAPHALYTICS cooperation (TU Delft, Oracle Labs)



#### Semantic Publishing Benchmark (SPB)

Countries Bulgari	a Athletes	Schedule & Results   Medals	s i Ulyi	пріс	Spor	
Information on this	page will not be updated. Facts were accurate as of August 13, 2012.					
Bulgaria						
Daigana		Medal Table				
		Show me: Countries 💌	GO			
		Rank Country		6		Tota
		1 🗮 United States	46	29	29	104
Sofia		2 🃟 China	38	27	23	88
BULGARIA		3 Great Britain & N. Ireland	29	17	19	65
	Teem CP's Comphall	63 💻 Bulgaria	0	1	1	2
	Team GB's Campbell secures medal	View full Bulgaria table				
Key Facts	secures medal					
Top medal sports (pre-2012) Wrestling	Luke Campbell is guaranteed an Olympic medal after beating Bulgaria's Detelin Dalakliev in his bantamweight semi-final.	Bulgaria Medallists				
Capital	5 Aug 12	Bronze				70
Sofia	Bulgaria beat GB volleyball	Tervel Pulev Men's Heavyweigh	nt <i>(</i> 91ka)			Ó
Population	men		( )			
7,500,000	MEN'S VOLLEYBALL	Silver				-
Size 110,994km²	29 Jul 12	Stanka Zlateva Hr Women's Freesty				Ó
Languages	Great Britain's men produce a battling display on their Olympic debut but are	A Women's Preesty	ie rzny			

11!.{

# Getting the word Out

#### LDBC is getting a second life!

— new & independent logo, infrastructure

#### The graph & RDF benchmark reference $LDBC \Leftrightarrow \rightarrow LDBC$

#### Benchmark Results Campaign

- Social Media, Blogs, White Papers, Press Releases, Markerting,...
- SPB 2.0 Audited results:
  - ONTO/OWLIM
  - Openlink/Virtuoso
- SNB 1.0 Audited Results:
  - Sparsity/Sparksee
  - Openlink/Virtuoso
  - HP Labs/Titan



## LDBC Roadmap

- EU project almost done
  - Final review April 28, Luxemburg
  - LDBC non-profit company takes over
  - Writing an Elsevier book
- 7<sup>th</sup> Technical User Community Meeting
  - November 2015, at TJ Watson
- GRADES 2015 workshop
  - May 31, SIGMOD/PODS 2015 @ Melbourne, Australia (!)
- Focus on Benchmark Results
  - Officially adopt SNB + SPB
  - Produce Audited Results

