



Part 1: A Platform for Large Scale Benchmarking Services

Part 2: Designing Programs for ICT based Services

DEIG – FEUP

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Bucharest, 8 October '12

Outline

- › **Part 1:**
- › A Platform for Large Scale Benchmarking Services

- › **Part 2:**
- › The DELLISS Project

Benchmarking Aims

Who performs better?

Why are they better?

What actions do we need to take in order to improve our performance?

Benchmarking Advantages

- › **Improving knowledge** of the organization itself;
- › **Identify areas** that should be improved;
- › Create **priority criteria** in planning;
- › **Knowledge of competitors** and the competitive level of the market;
- › **Learn from others.**

Applications



Construction Industry Benchmarking Platform (21000 companies in Portugal)



Secondary School Benchmarking Platform (all Portuguese secondary schools)

- › **Self-diagnosis** of the company's performance against its objectives:

Where do we stand against my own expectations and objectives?

- › **Real time assessment** of the company's performance against competitors:

Where do we stand against “best in industry”?

INDICATORS		CONSTRUCTION INDUSTRY			ADDRESSED TO		FREQUENCY	
		CONT.	CONS	CONS. M.	COMPANY	CLIENT	ANNUAL	BY OPERATION
CLIENT / SATISFACTION								
01	Client Satisfaction – Product	■	■	■		■		■
02	Client Satisfaction – Service	■	■	■		■		■
03	Company Satisfaction – Client Cooperation	■	■		■			■
04	Company Satisfaction – Availability of payments	■	■	■	■			■
05	Company Satisfaction – Cooperative work	■	■		■			■
06	Repetition of business	■	■	■	■		■	
ECONOMIC / FINANCIAL								
07	Productivity	■	■	■	■		■	
08	Profitability	■	■	■	■		■	
09	Sales growth	■	■	■	■		■	
10	Hanging invoicing	■	■	■	■		■	
PRODUCTIVE PROCESSES / SAFETY								
11	Predictability – cost	■	■			■		■
12	Predictability – time	■	■	■		■		■
13	Impact of defects at delivery	■	■	■		■		■
14	Type of Defects	■	■	■		■		■
15	Accident frequency rate	■	■		■		■	
16	Successful bids	■	■	■	■		■	
HUMAN RESOURCES / LEARNING								
17	Subcontractors	■	■		■		■	
18	Permanent Employees	■	■	■	■		■	
19	Training	■	■	■	■		■	
20	Employee Satisfaction	■	■	■	■		■	
INNOVATION / ENVIRONMENT								
21	Management of solid residues	■	■	■	■		■	
22	Water consumption	■			■			■
23	Technology Investment	■	■	■	■		■	

LEGEND:

- CONSTRUCTION INDUSTRY: CONT = Contractors; CONS = Consultants; CONS. M. = Construction Materials Companies (Manufactures and Traders)

Selection of a framework for the classification of the indicators

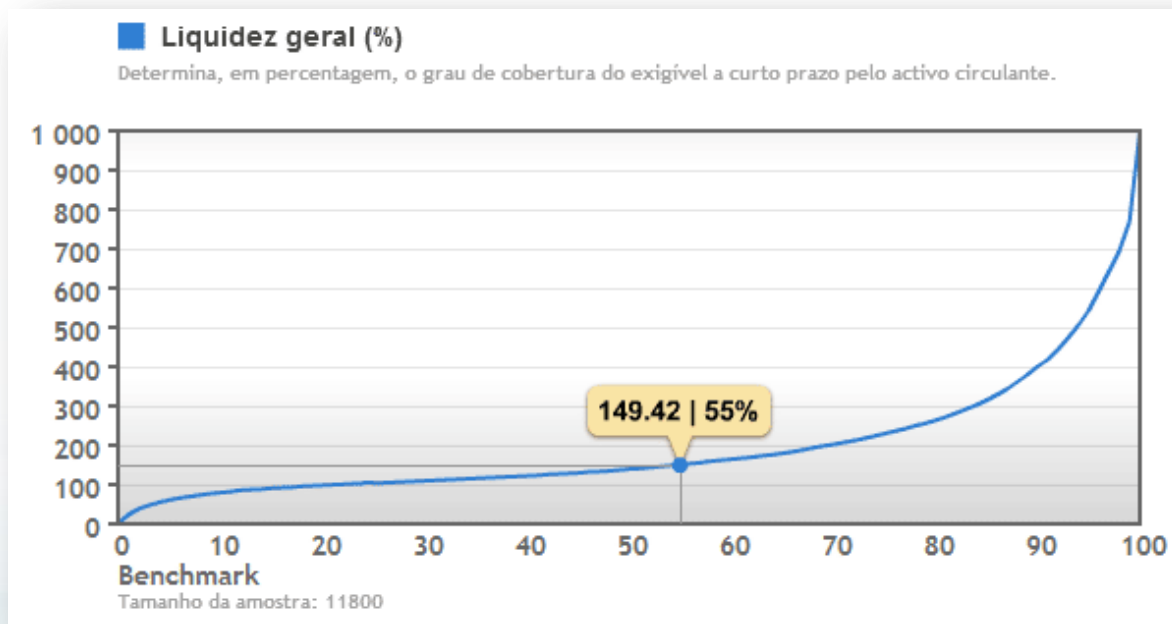
Balanced Scorecard

Evaluation of Construction benchmarking schemes

- UK – Construction Key Performance indicators
- USA – Construction Industry Institute Benchmarking and Metrics
- Chile – National Benchmarking System
- Brazil – System of Quality Indicators for the Construction Industry
- Denmark- Danish Construction Benchmarking



The benchmark results allows one to understand how the whole industry is distributed and informs each company of their relative position, with complete confidentiality and anonymity.



1.01 | Productivity

1.02 | Sales Profitability

1.03 | Current Asset Potential

**1.04 | Expenses and Operational
Losses index**

1.05 | Financial autonomy

1.06 | General liquidity

1.07 | Total assets profitability

1.08 | Invested capital profitability

Financial Indicators: data gathering



Regulatory authority of the construction industry
and real estate in Portugal

Companies submit to INCI benchmark data when they
request/renew construction licenses

Advantages

- › Information available in INCI's databases – companies don't need to supply additional data;
- › **Easy to use and intuitive presentation of the results;**
- › Guarantee of **full confidentiality** of data and results;
- › Analysis and diagnosis of **ALL construction industry** (about **21.000 companies**).

I1.01 ÍNDICE DE PRODUTIVIDADE

Avalia o volume de negócios em obra em função do valor da classe de alvará detido.

I1.02 RENTABILIDADE DAS VENDAS

Determina os níveis de rentabilidade associada à actividade principal da empresa, antes de gastos de financiamento, amortizações, depreciações, impostos e taxas como percentagem do Volume de Negócios em Obra.

I1.03 POTENCIAL DE ACTIVO CORRENTE

Avalia o impacto do volume de negócios em obra, como potencial de criação de activo corrente.

I1.04 ÍNDICE DE GASTOS E PERDAS OPERACIONAIS

Avalia a eficiência da actividade produtiva na criação de volume de negócios.

I1.05 AUTONOMIA FINANCEIRA

Avalia o grau de cobertura assegurado pelos capitais próprios para o investimento global realizado pela empresa.

I1.06 LIQUIDEZ GERAL

Avalia o grau de cobertura dos compromissos exigíveis a curto prazo pelo activo corrente.

I1.07 RENTABILIDADE DO ACTIVO TOTAL

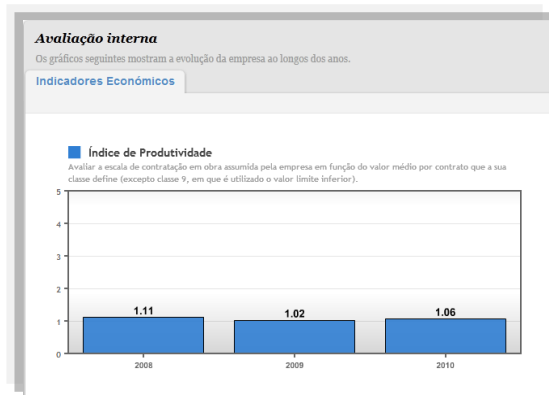
Indica a taxa a que o investimento em activos está a ser rentabilizado.

I1.08 RENTABILIDADE DO CAPITAL INVESTIDO

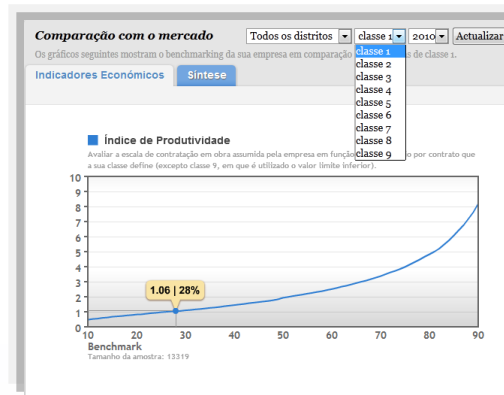
Indica a taxa de eficácia com que os capitais próprios investidos na empresa estão a ser rentabilizados.

Results

Internal Evaluation



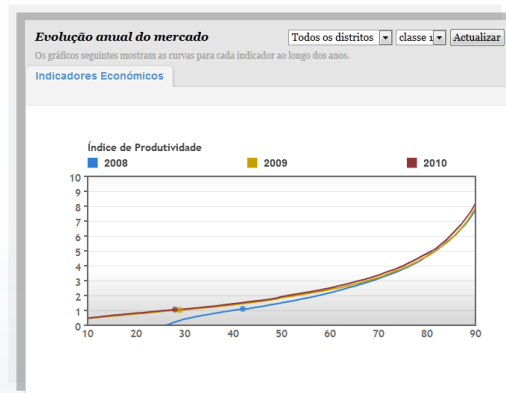
Benchmarking



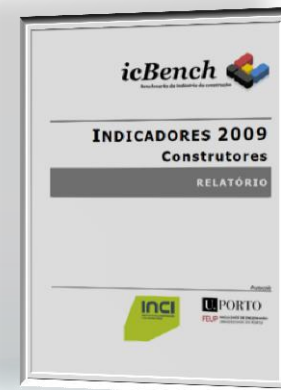
Summary



Evolution



Annual Report



Site



Next Steps

Performance Indicators Level 2



- Annual
- Operation



Education: BESP project

Internet based Benchmarking System for Portuguese Secondary Schools



Partners:

FEUP, Universidade Católica Porto, INEGI



- Home
- Benchmarking Restrito
- Rankings Secundário
- Rankings Básico
- DEA - Valor Acrescentado

Área reservada



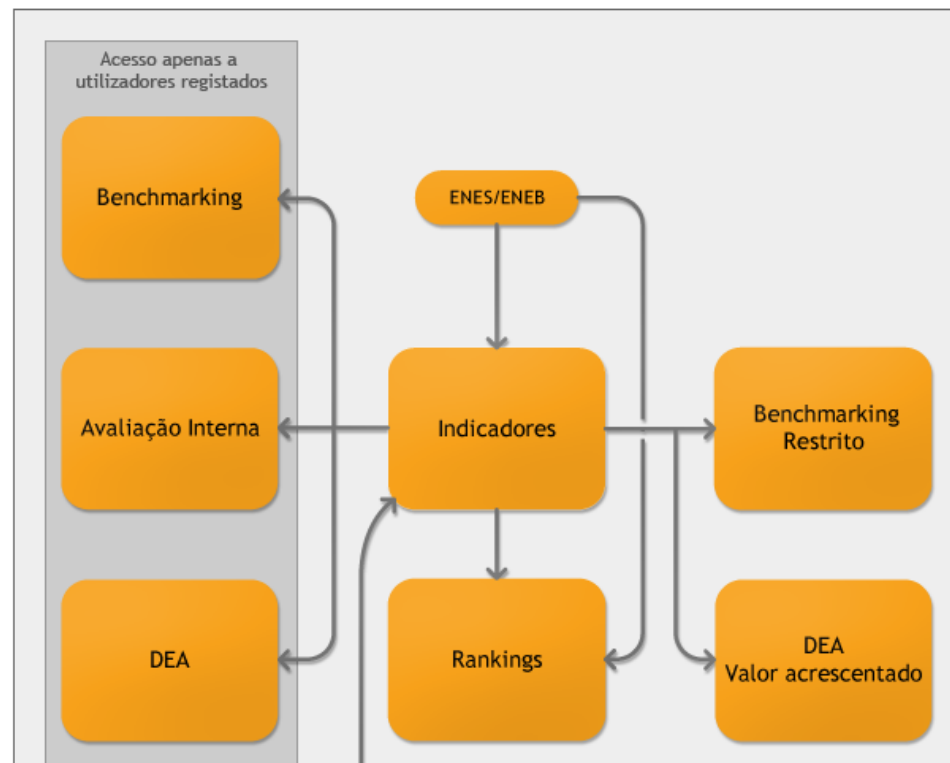
Escola Secundária António
Sérgio | Vila Nova de Gaia

editar dados da escola

terminar sessão

- Avaliação interna
- Benchmarking
- DEA
- Inquéritos anuais
- Criar Relatório

Benchmarking das Escolas Secundárias Portuguesas



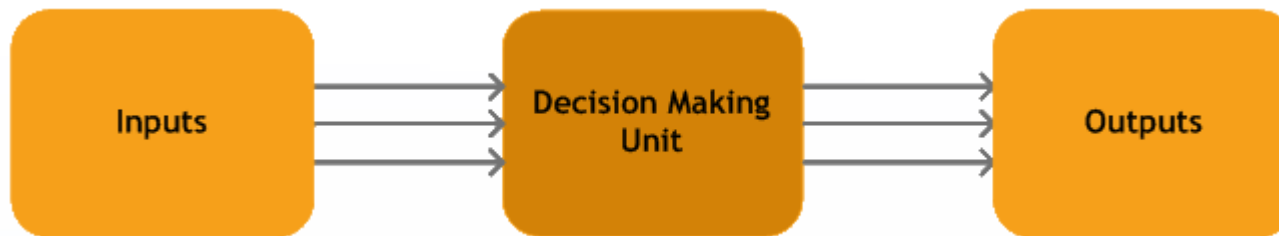
Objectives

To develop a benchmarking web site, where registered schools can compare their performance, at a national level, based on selected Key Performance Indicators.

Benchmark results are intended to support school self-evaluation procedures, and to promote the continuous improvement of schools performance.

DATA ENVELOPMENT ANALYSIS (DEA)

Methodology that enables the assessment of a Decision Making Unit (DMU) in the process of transforming resources (inputs) in results (outputs).



Example:

- 1 Input:** average student scores at Portuguese and Maths courses in the 9th year
- 9 Outputs:** average student scores in each of the 8 final exams that had a higher number of enrolled students.

Eficiência DEA

Ano 2008/2009

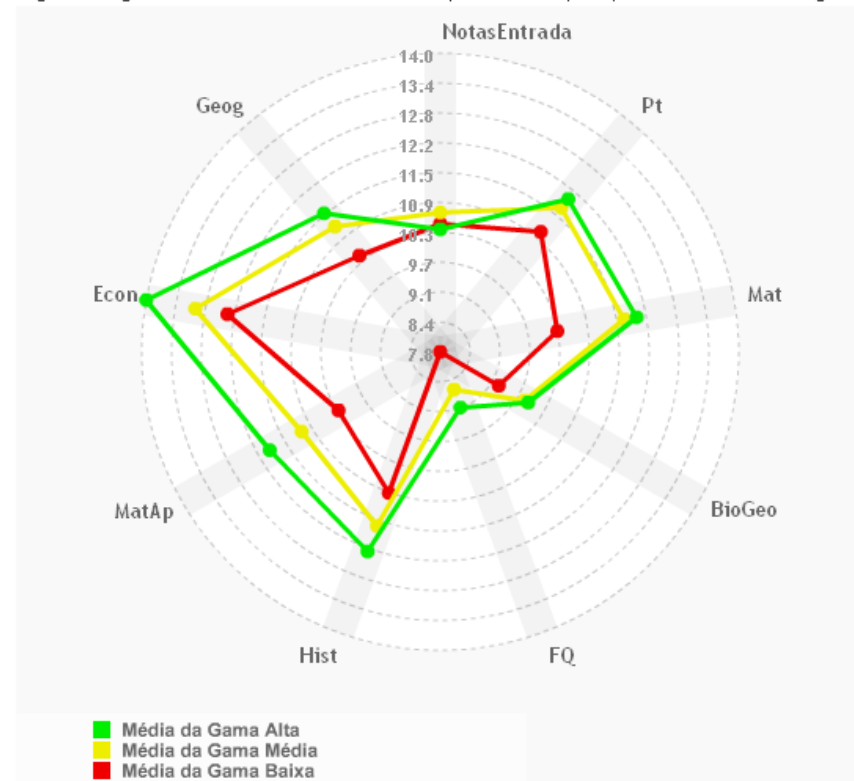
Estes resultados são provenientes do cálculo da eficiência através de um modelo DEA em que o input utilizado é a média ponderada das notas dos alunos no final do ensino básico, e os outputs são a média ponderada de exames de Secundário com mais provas. [\(ver indicadores em detalhe\)](#)

As escolas aqui listadas são escolas que têm dados dos alunos à entrada (dados ENEB para 2005/2006 e 2006/2007) e dados dos alunos à saída (dados ENES para 2008/2009). Para cada escola, só são considerados os exames em que houve mais de 10 provas.

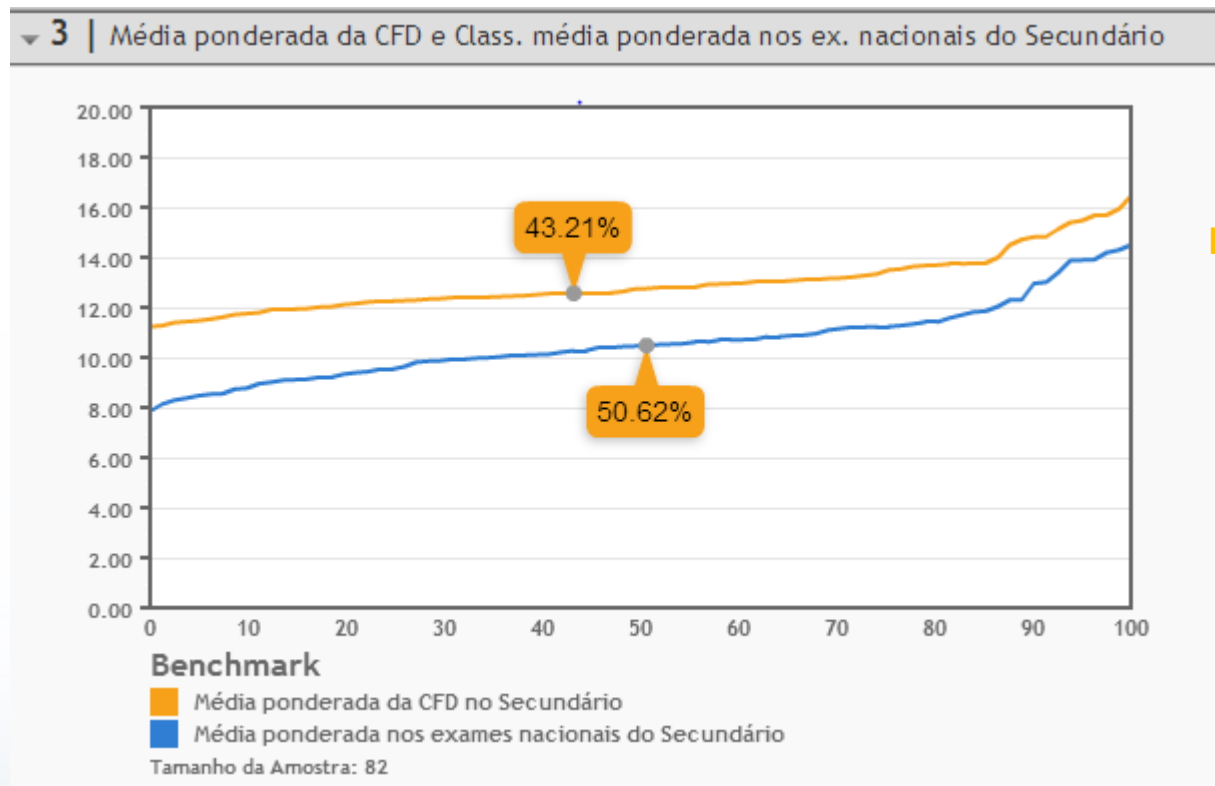
Legenda: ● Desempenho Elevado ● Desempenho Médio ● Desempenho Baixo

Escola	Desempenho	Gama
Centro de Educação Integral (Aveiro)	92.52%	●
Centro de Estudos Básico e Secundário - CEBES (Porto)	91.59%	●
Centro de Estudos de Fátima - CEF (Santarém)	100%	●
Centro de Estudos Educativos de Ançã (Coimbra)	91.75%	●
Colégio Bartolomeu Dias (Lisboa)	98.95%	●
Colégio Cedros (Porto)	93.24%	●
Escola Secundária António Gedeão (Setúbal)	96.84%	●
Escola Secundária António Nobre (Porto)	92.26%	●
Escola Secundária António Sérgio (Porto)	100%	●
Escola Secundária Aquilino Ribeiro (Lisboa)	90.92%	●

O gráfico seguinte mostra os valores médios do *input* e dos *outputs* para as três diferentes gamas



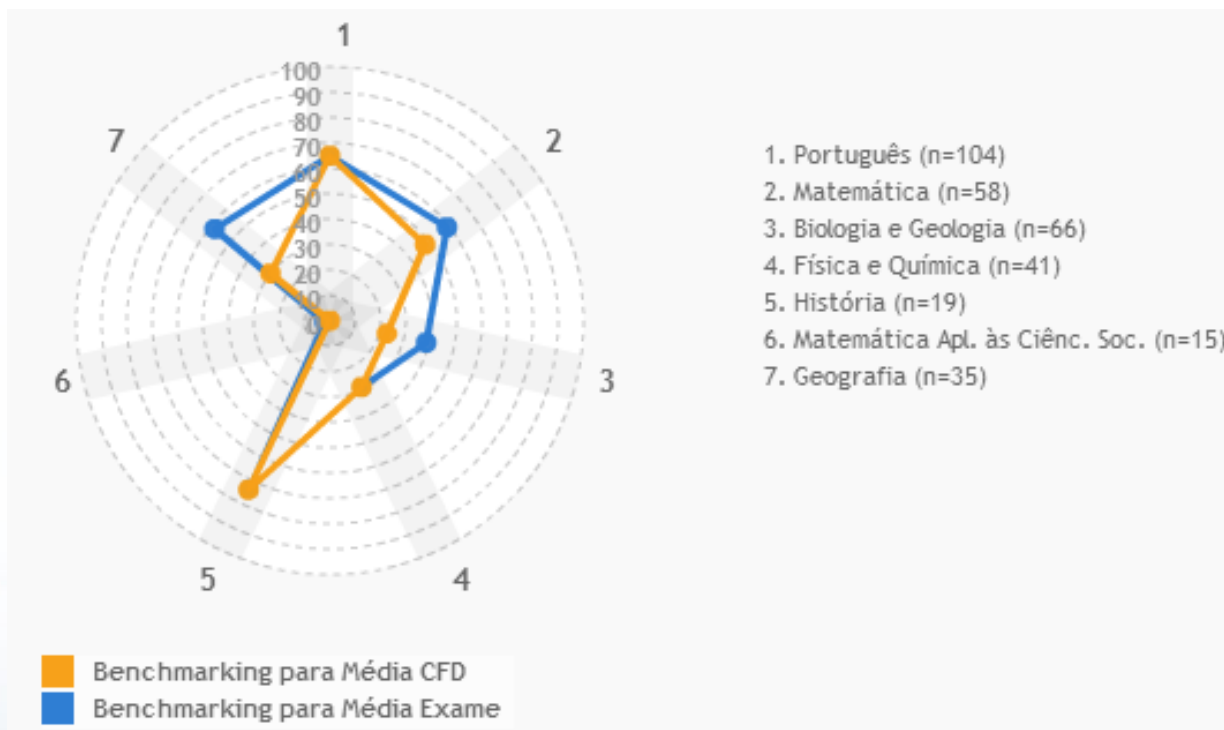
Other outputs:



Internal Performance

Exam Performance

Other outputs:



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Obrigada

