

# The performance measurements in the UK biotechnology companies

Dr Yun Dai and Dr Morrison Handley-Schachler

The 4<sup>th</sup> Annual Conference of Economic Forum of Entrepreneurship & International Business

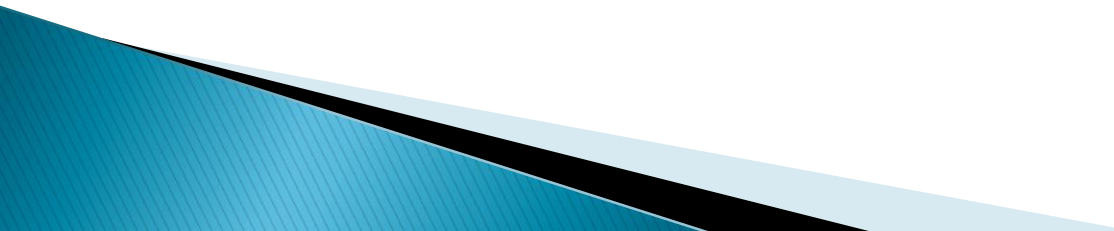
Venue: London University Institute in Paris, France

January 31<sup>st</sup>, 2014

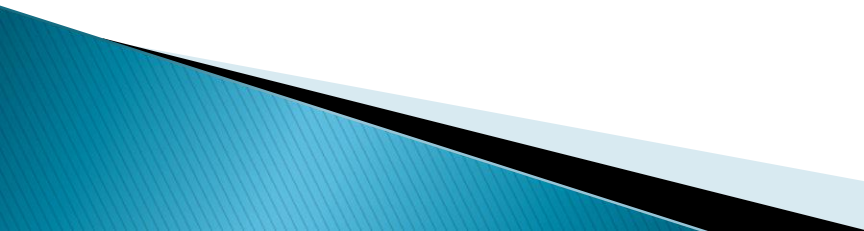
Organized by: ECO-ENA: Economics & ECO-Engineering Associate, Inc., Canada

[www.eco-ena.ca](http://www.eco-ena.ca)

# Research Objectives

- ▶ To investigate how the UK biotechnology companies assess their performance
  - ▶ To recommend a range of suitable performance measurements for these companies
- 

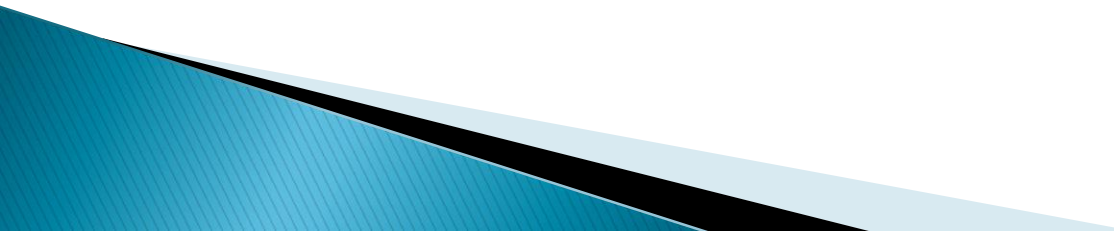
# The UK Biotechnology Industry

- ▶ It has won 23 Nobel prizes and had over 10 world leading technological breakthrough in the last 20 years (Pharmiweb, 2008).
  - ▶ One sixth of the world's most popular prescription medicines were developed in the UK (ABPI, 2012).
  - ▶ This industry generates about £2.5 billion of revenue per year and employs between 15,000 and 19,000 people (Pharmiweb, 2008).
- 

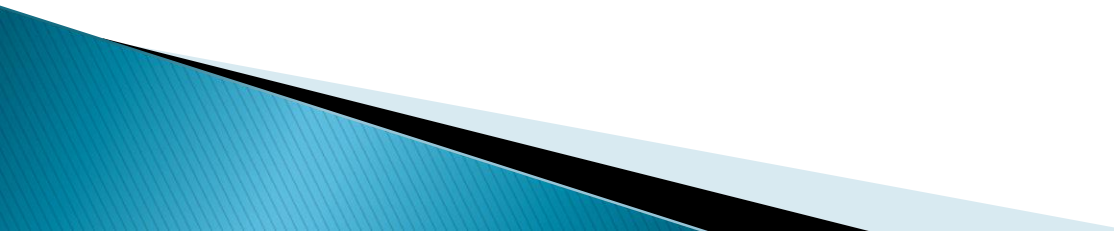
# Features of the Biotechnology Industry

- ▶ High technology
- ▶ Capital intensity

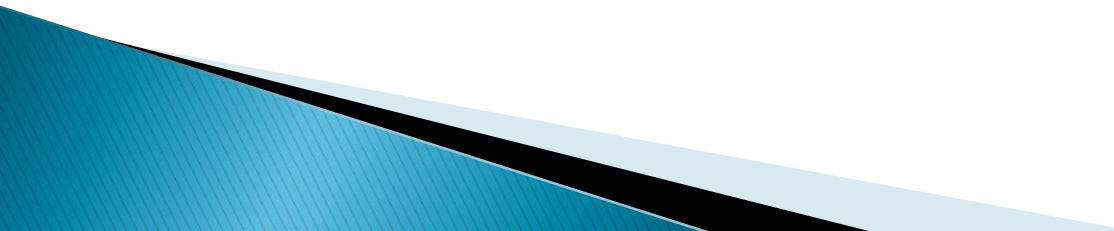
For example, the pharmaceutical sector invests about £13.3 million in R & D every day.



# Measures in use

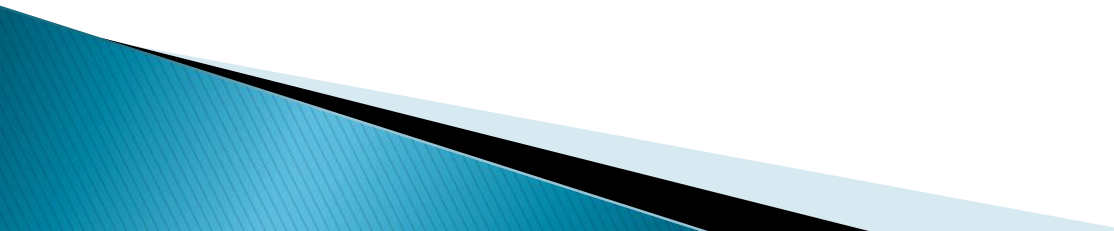
- ▶ Financial: sales, profits, return on capital employed (ROCE), cash flows
  - ▶ Customer: number of new customers, customer satisfaction, customer profitability, customer retention
  - ▶ Competitiveness: market share, sales growth
  - ▶ Resource utilisation: productivity (input : output), efficiency (resource planned : consumed), utilization (resource available : consumed)
  - ▶ Quality of service: reliability, responsiveness
  - ▶ Innovation: percentage of sales and profit from new products, time to develop next generation of products, number of patents
  - ▶ Flexibility: product/service introduction flexibility, delivery flexibility
- 

# Factors that may affect the use of performance measures

- ▶ The competitive environment a company faces
  - ▶ Company strategy and
  - ▶ Type of business a company is running
  - ▶ Information availability
  - ▶ Stakeholder power
- 

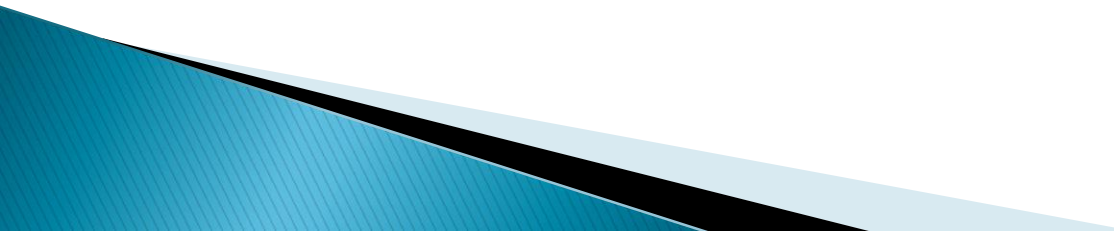
# Selecting Criteria

Performance measures used in the British biotechnology companies:

- ▶ Suitability
  - ▶ Acceptability
  - ▶ Feasibility
- 

# Research Methodology – Questionnaire

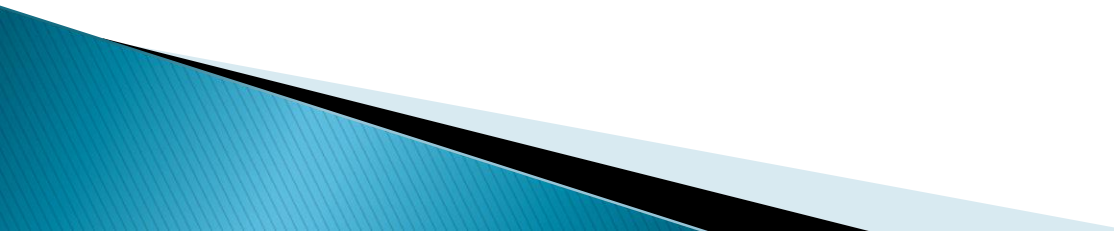
34 common measures under 5 performance measurement perspectives

- Financial
  - Innovation
  - Customer
  - Competitive
  - Organisational perspective
- 



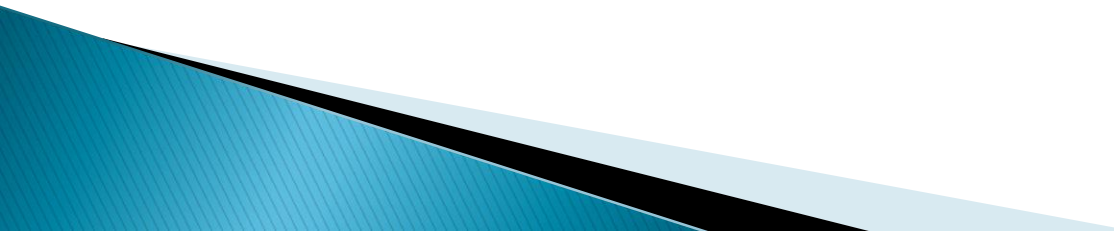
# Research Methodology – Interview

15 interviews were done:

- ▶ To further analyse the relationships between financial performance and its determinants.
  - ▶ To obtain managers' opinions of individual performance measurements.
  - ▶ To find out whether there are other determinants that are not included in the questionnaire.
- 

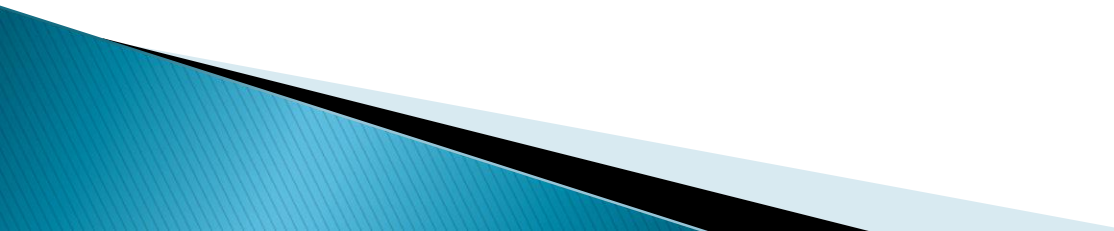
# Findings and Analyses

The most commonly used performance measurements:

- ▶ Customer awareness
  - ▶ Customer perceived quality
  - ▶ New contracts secured
  - ▶ Cash reserve
  - ▶ Met goal (compared with your plan)
  - ▶ Cash flow liquidity
- 

# Findings and Analyses

The least popular performance measurements:

- ▶ Number of new patents
  - ▶ Number of partners
  - ▶ Positive analysis reports
  - ▶ Research success
  - ▶ Product lead time
  - ▶ Public relationships
  - ▶ Profit margin of new products
  - ▶ Number of overdue deliveries
  - ▶ Funding of R & D
- 

# Findings and Analyses

10 key performance measurements recommended:

- ▶ Profit margin or profit
  - ▶ New contracts secured
  - ▶ Cash reserve
  - ▶ Funding of R & D
  - ▶ Met goal
  - ▶ Profitability of new products
  - ▶ Customer perceived quality
  - ▶ Number of new customers
  - ▶ Brand loyalty
  - ▶ Market share
- 