

# Online analysis pays.

A survey by Infracerv Höchst Technik in Germany

*“On-line analysis is often cheaper than laboratory analysis – even when analysing just one sample per day! “*

This is the conclusion reached by the department of Measurement, Monitoring, Control and Analysis at Infracerv Höchst Technik in Germany, in a survey of nine different measuring procedures.

Although the advantages of process analysis are generally well-known, many users still fear high costs of investment and retrofitting, but in some chemical and pharmaceutical companies **up to four percent of the production costs are taken up by analysis**. A large part of this analysis is still undertaken “offline” in the in-house lab or in external laboratory.

**“From discussions with many customers it has become clear that the greatest reservation they have is about the costs, or rather, the lack of clarity about the costs”** explains Dr. Stefan Stieler, head of the Measurement, Monitoring, Control and Analysis department.

Based on many years of experience and in close cooperation with chemical and pharmaceutical companies, the analysis team has **compiled a study of the costs** of nine different methods:

- A-** For laboratory analysis, for example, the team evaluated the yearly of:
  - Sample collection
  - Sample transport
  - Sample disposal
  - Lab staff hours
  - Analysis costs and time
  - Analysis time spent entering the data into the system.
  
- B-** This was compared with the yearly costs of on-line process analysis equipment:
  - Depreciation
  - The interest on the investment in setting up the infrastructure.
  - The proportional costs for the space taken up by the analysis instruments
  - All running costs for maintenance, inspection, repair, wearing parts, & repair materials

## The results

- 1- On-line analysis can pay off **even when analysing just one sample per day!**
- 2- The **purchase cost** is a relatively **small percentage** of the total cost of ownership.
- 3- The main conclusion was that **up to 70 percent of the costs** accrued over the working life of a process instrument **are costs for calibration and maintenance**.
- 4- A clear cost advantage of online methods, especially for the multi-component analysis of gas and liquids, one-component analysis of gases and DOC of ultrapure water (ppb range).
- 5- The break-even point **for pH measurements, multi-component gas analysis and DOC** of ultrapure water is **around three measurements per week**.
- 6- The break-even point **for one-component gas analysis**, the breakeven point is around **two measurements per week**.

**“If you are thinking of investing in equipment for process analysis, do not overrate the initial investment costs. There are many approaches to cost optimisation in the field of calibration and maintenance”** advises Stieler.

## **Outlook and challenges for the future**

**“In this study we only compared the direct costs because these can be quantified precisely”**, explains Stieler.

“We didn’t include aspects such as:

- The improvement of process
- The improvement of product quality due to quicker access to information and control of the production line
- The reduction of downtime and resulting opportunity costs”.
- Process measuring equipment continues to work at weekends and during holidays without requiring shift work.
- Loss of time and quality due to lab errors or errors in sample collection is reduced”.

The technological improvements expected in the field of process measuring technology over the next few years will doubtless serve to increase these benefits.

Infraserv, in Frankfurt-Höchst, Germany, supplies products and services to over 80 companies employing around 20,000 people.

**For more information about on-line analyser systems please contact:**

**B-R Controls P/L**  
**PO Box 121**  
**Hornsby NSW 1630**  
**AUSTRALIA**  
**Phone: +61 2 9476 2133**  
**[mail@brcontrols.com.au](mailto:mail@brcontrols.com.au)**  
**[www.brcontrols.com.au](http://www.brcontrols.com.au)**