How do you get value from your QUESTOR membership?

Innovation Pipeline

Product Innovation

Product launch

Product Sales

Revenue and **Profit**

T.E. Laboratories- What we do?

- Multi divisional Irish chemical company:
  - ISO 17025 accredited environmental testing laboratories
  - Oil testing laboratories
  - Standards, chemical and marker dye production
  - Pharmaceutical testing
  - R&D
- Set up in 1991
- 38 employees- 26 chemists & engineers

T.E. Laboratories- Areas of R&D Interest.

- **Water test kits and passive samplers** for confirmation of compliance with environmental legislation
- **Photocatalytic system** for the disinfection of water
- Improvement of **TPH analytical methods**
- Improvement and development of TelLab's newly developed environmental monitoring device - **Aquamonitrix™**
- **Reagent Test kit** development.
- **Oil condition monitoring** projects and standards

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Let's start with the money!

Membership Cost:

€7,250
Per annum

€43,500
Over 6 years

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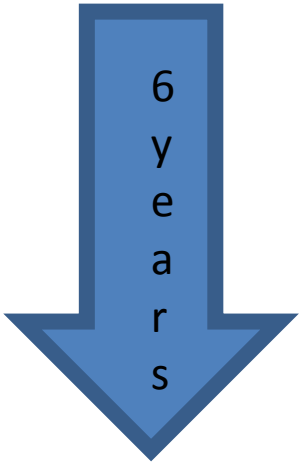
Leverage on initial Investment:



€490,000

Breakdown of Return

- Tangible results:
  - ✓FP7 ATWARM €200,000 2 years

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Breakdown of Return

- Tangible results:
  - ✓FP7 ATWARM €200,000 2 years
  - ✓Innova project €125,000 2 years

Breakdown of Return

- Tangible results:

✓FP7 ATWARM	€200,000	2 years
✓Innova project	€125,000	2 years
✓ FP7 MOSSCLONE	€165,000	3 years
	€490,000	

NB Cash to TelLab to perform R&D

Breakdown of Return

- Tangible results:

  Access to IP from funded projects.

Breakdown of Return (continued)

- Intangible results
  - ✓Network with researchers
  - ✓Network with other companies.
  - ✓FP7 opportunities
  - ✓Market intelligence on new technologies
  - ✓Tax relief on R&D activities

Breakdown of Return Summary

- Leverage of funding mechanisms to generate a significant R&D programme to produce IP.
- Combination of internal and external funding produces a research budget capable of delivering IP.
- Access to IP

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Breakdown of Return Example

aqua monitrix™

Early warning water

pollution detection device

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aqua monitrix™

Real time remote monitoring of water quality

Easy-to-use, early warning pollution detection device for field use

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TelLab is an Irish SME active in the applied chemistry area. An active R&D programme has been developed around the co-operating divisions of Environmental analysis, Oil and Transformer oil analysis and the Manufacture of reagent chemicals. Aquamonitrix is an output from this research.

Technology

Aquaflo nitrix is a convenient, portable, deployable water monitoring device with surface water and industrial applications. Aquaflo nitrix measures pH, nitrate and nitrite simultaneously in real-time, with wireless remote monitoring.

This innovative autonomous microfluidic device can perform in-situ calibration and high frequency measurements over long deployment periods. AquaMonitrix has an in-built communication system and process control add-on which allows the user to monitor water quality remotely. These features give the user an immediate warning on the detection of a pollution event and will alert the relevant stakeholders, therefore enabling action to be taken to limit environmental damage.

TelLab are currently actively developing analysis techniques for further parameters for integration onto the Aqua Monitrix device. These include COD, conductivity, phosphate, ammonia, herbicides, pesticides, microbiological parameters and heavy metals. These will be available in the near future.

Microfluidic Chip

Key Benefits

- Small size, for wide ranging deployment applications.
- Easy installation, can be installed on site in a few minutes with no complex mechanical tasks.
- Cost effective, compared to currently available applications.
- Low maintenance costs, in-situ calibration and long deployment periods.
- Well validated chemistry with all test methods compared to ISO 17025 accredited techniques.
- Versatile, can be used in a wide range of matrices - freshwater and industrial applications. Also the suite of analytes detected by the device can be pre-chosen by the customer.
- Process control, to minimise pollution incidents.
- Auto sampling capabilities, triggered by changes in the level of analytes so that real-time samples may be collected for subsequent analysis in a laboratory. This will ensure the cause of any pollution incident can be fully investigated by full traditional laboratory techniques.
- Wireless remote monitoring; results and alerts can be sent to the user.

Applications

More parameters currently being developed for future easy integration onto the device

Testing Device

Microfluidic Analytical Platform
Parameters: pH, nitrite and nitrate

Waste storage

Results and/or alarms sent to user's smartphone or computer via system software

Technical Specification

Technology:
Microfluidic and Colorimetric Chemical Detection

Minimum Sampling Interval:
20 Minutes

Service Interval:
6 months

Calibration:
Automatic two point Calibration

Linear Range:
Nitrite 0-1.5mg/L

Limit of Detection:
Nitrite 0.03mg/L
pH Range 4-9
pH Resolution 0.1 pH units

Processor:
Texas Instruments CC2511F32

Memory:
Optional Micro SD memory slot

Memory and Communication options:
- Data logging to micro SD card,
- Short range 2.4GHz wireless radio (Typically 15m indoors),
- GSM,
- Modbus SCADA interface

Physical:
Dimensions: 350x300x150 mm
Weight: 3.5 - 4.5 kg
Enclosure: IP 68 plastic
Mounting: Wall/Pole mounting

www.aquamonitrix.com

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Conclusion

Questor has been an Integral part of companies development of R&D strategy.

TelLab R&D Strategy

- **Low risk short-term projects:** are internally funded by the company
  - Projects arise from internal innovation initiatives

- **Medium-term medium risk projects**: we look for national or cross-border support from Enterprise Ireland or InterTrade Ireland
  - Project ideas from networking with Universities

- **Long-term higher risk projects:** we seek European funding e.g. FP7
  - Selling R&D capability at a European level

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Conclusion

Questor has been an Integral part of companies development of R&D strategy.

Fees on membership spend have provided access to IP.

Fees have been leveraged to provide larger R&D spend and further access to additional IP

Products have been launched with further potentials in the pipeline.