



New product development.

Agenda

1. Market intelligence and knowledge required to assist in an NPD.

Nigel Marc Roberts

2. What business sector do we service, at what are market potential opportunities.

Marcus Palisoc

3. Marketing sensing and understanding our value proposition.

Jason Murphy





1. Market intelligence and knowledge required to assist in an NPD.
Nigel Marc Roberts

Organisation intelligence



Customer Care



Do we have the resource to service, maintain and care

04

05

Knowledge Base



Do we have the engineering, design and or collaborative skill sets within the team.

02

03

01



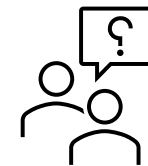
Money

Have we the Financial support



Capacity

Do we possess the resources.



Are Lion Expansion-Ready

What is the Business Opportunity and are the board commitment to expansion.

Organisation intelligence



1

Unfortunately, this nearly always coincides with a decline in their market share.

2

Products are more likely to be successful if they are planned and implemented well (**Zirger & Maidique, 1990**) This requires excellent internal organization to deliver smooth execution of all phases of the development process by well-coordinated functional groups. Furthermore, (**Katz, 1982**) suggests team selection plays a key role influencing process performance, as teams with a short history together tend to lack effective patterns of information sharing and working together, and teams with a long tenure together tend to become inward focused and neglect external communication. A team with a working tenure of moderate levels is found to deliver higher project performance.

3

Do we have the capacity manufacture, manage, and service the process. This can be internally, or with the supply chain partners.

4

Ensure to build your service/product around, and with your customers. Its critical to meet with customers directly in focus groups to achieve a common team understanding of who the customer is what their wants, needs and aspirations are.

5

Money. A note from point 1, it is generally accepted that the last role of the dice for a declining business is the introduction of a new product/solution or service. Yet the process from conception to commercialising can be both difficult and VERY Long.

Market intelligence

Understanding our target market

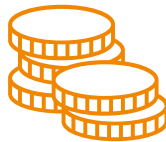


Who is the market leader & why

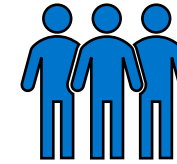
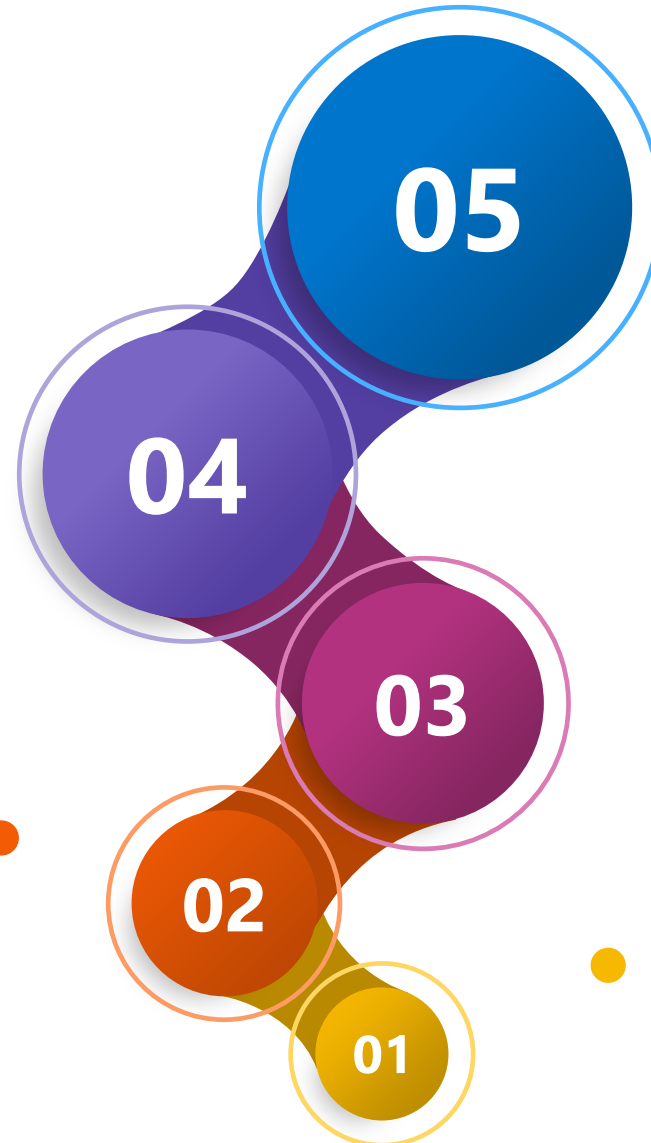


Understand the market leader its dominance, their competitive landscape and direction.

What is the market value

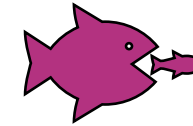


Are we entering a growing .



Collaboration

This is multi layered and stretches across the supply chain., organisation and critically the customer.



Competitors

What is the intensity of competition.



What is our market

Are we entering a growing.

Market intelligence

Understanding our target market



1 **Cooper and Kleinschmidt (1987)** found that products that entered large and growing markets were more likely to be successful.

2 Entering a growing market although positive comes with challenges in terms of competition and client demand.

3 Evaluating the competitors' propositions is all about studying exactly how do they position themselves, What is their unique selling proposition, their competitive edge, cost are they high end/low or middle of the road, can you see a weaknesses, look at their website? **WHY?** research suggests that products introduced into markets with low overall intensity of competition are more likely to be successful.

4 Understanding the market leader, who is the standout leader in the market, are there any weaknesses or opportunities to fill or are there opportunities to collaborate.

5 Customer involvement also has been shown to improve the effectiveness of the product concept in the rational plan stream (**Cooper & Kleinschmidt, 1987; Zirger & Maidique, 1990**). However, (**Eisenhardt & Tabrizi**) suggests it is not exactly clear how or when suppliers and customers are appropriately involved in the development process, and the evidence is not unanimous

Market intelligence

Understanding our potential customers



Behavioural

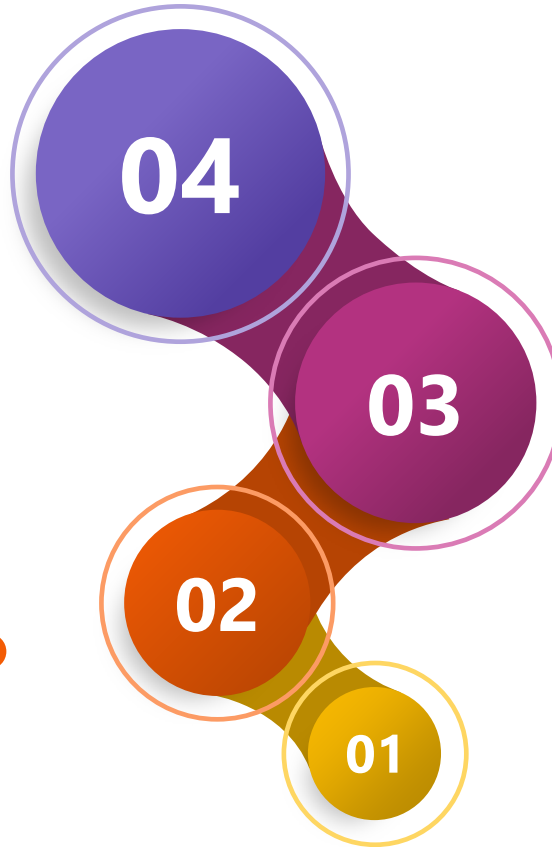


Behavioural segmentation helps understand the buying habits and patterns of your potential customers.

Demographics



Demographics are the characteristics of the potential clients categorized generally by distinct criteria—such as age, gender and income



Geographic

Geographic segmentation groups the potential customers based on their locations



Our Customers

Segment of Potential Customers.

Market intelligence

Understanding our potential customers



1

The customer value exists only on the customer's terms and reflects the customer's priorities and preferences **(Piercy, 2009)**. Customer involvement is also has been shown to improve the effectiveness of the product concept in the rational plan stream **(Cooper & Kleinschmidt, 1987; Zirger & Maidique, 1990)**.

2

Not only do age groups and generations differ in their buying habits, but research also suggests they respond to advertising differently and tend to have distinct ways of speaking and spend their time on separate platforms. As an example, millennials may spend most of their time on Instagram and Facebook, while **seniors (ME)** prefer their email inboxes.

3

The culture in the marketplace. Example some colours & numbers can be viewed in different countries as bad luck , some are highly expectant of the ZERO carbon message and would view the product will increase value if it was environmentally friendly.

4

Their buying habits and how do they buy their products currently and what are the trends looking forward. Example Web-shops, buying patterns, desktop/mobile visuals/ ease of use/ product linkage to deliver add on sales. Which social media platforms will deliver best and most potential profitable returns.

But producing what the customer wants may or may not be either possible or profitable.

2. What business sector do we service,
at what are market potential opportunities.
Marcus Palisoc



Current Market Sector



| Public safety and security

The UK PS&S market valued at approx. **\$15 billion** and is growing (ITA, 2022)

Global breathalysers market valued at **\$812 million** (Mordor Intelligence, 2022).

| Target market

The market for these devices are predominantly to **police and security forces**



Current Product



Product

We currently specialise in the manufacture of **electronic breathalyser systems**



Supplying
mobile (in-car),
static and handheld
breathalyser
products

Gathering
credible evidence in
incidents of
suspected drink
driving

Extensive
range of
breathalyser
products

For Police
Forces throughout
the UK and
worldwide

New Product Development Project



Healthcare industry

Focusing on the sub-sector:
Medical devices, equipment, and hospital
supplies manufacturers.

Target market

The company can see a great potential in
developing a device that could meet both
clinical and personal requirements.



New Product Development Project



Identifying possible commercial opportunities

Through a **Knowledge Transfer Partnership** with a local university, we have identified a number of possible commercial opportunities that may exist by adapting the chemical alcohol detector system (which is at the heart of our breathalyser products) to cover the detection of other organic materials, including those generated in the breath as a result of various virus infections.

 **COVID-19**

 **Cancer**

 **Pregnancy**

 **Drugs**

 **Diabetes**

 **Carbon monoxide**

New Market Potential Opportunities



COVID-19

Scientists develop an RNA-based breath test to detect COVID-19, called 'The Bubbler', a breathalyser that reverse-transcribes RNA from airborne SARS-CoV-2 in breath, predicts lower respiratory tract involvement and is less invasive than alternative testing approaches (Brown University, 2021).

Researchers in Singapore have developed a prototype breathalyser that can sensitively and accurately diagnose COVID-19, even in asymptomatic individuals, **in less than 5 minutes** (IET, 2022).

Global market for COVID-19 diagnostics was valued at over \$60 billion in 2020 and could grow to **\$195 billion by 2027** (BCC Research, 2020).



New Market Potential Opportunities



I Drugs

Swedish scientists have developed new technology that detects tiny quantities of drugs in a person's breath. Current drug testing relies on urine or blood samples, meaning it is more invasive and complex to carry out. (Kentish, 2017).

A breathalyser that can detect up to **12 types of drugs** (Northpoint Seattle, 2018).



I Cancer

Researchers have launched a clinical trial to develop a breath test, analysing molecules that could indicate the presence of multiple cancer at an early stage (Cancer Research UK, 2019).



New Market Potential Opportunities



| Diabetes

A breathalyser that can **monitor blood glucose levels**, which has the potential to replace finger pricking for people with diabetes, is being developed (Diabetes, 2016).

The global blood glucose monitoring system market is projected to grow from **\$14.39 billion in 2021 to \$28.89 billion in 2028** (Fortune Business Insights, 2021).



| Pregnancy | Carbon monoxide

Many hospitals already do carbon monoxide testing at booking appointments for all women. Aside from identifying pregnant smokers and offering them help to quit, **it can often prompt lifesaving checks to home boilers.**

Smoking in pregnancy is known to increase the risk of miscarriage, premature birth and stillbirth (Tommy's, 2017).

But..

Carbon monoxide testing is not just for pregnant women who smoke.



3. Marketing sensing
and understanding our value proposition.
Jason Murphy

The Etic Perspective



Market Intelligence

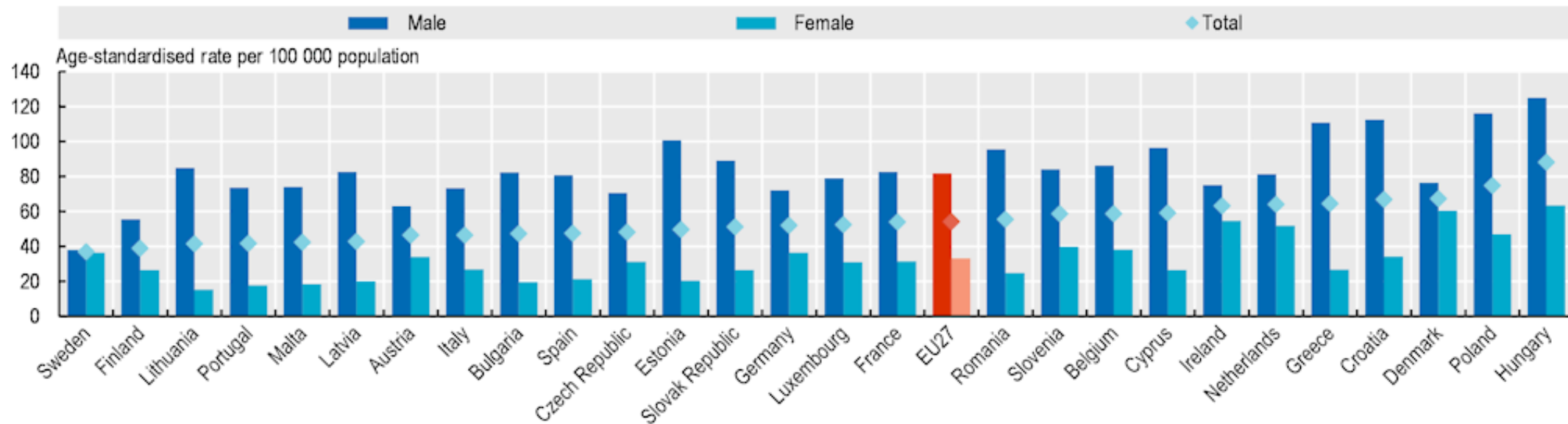
Around 8 million people die each year from cancer – Lung cancer accounts for almost 25% of deaths

46,000 People in the UK are diagnosed with Lung Cancer each year.

Early detection means that more treatment options are available.

5yr survival rate is 7% for late stage diagnosis.

Lung cancer mortality rates by sex, estimates for 2020



The Etic Perspective

Market Intelligence

Low Dose Computed Topography is currently used for screening.

Estimated 30,000 machines worldwide.

Disadvantages of LCDT include:

- Radiation exposure
- High Equipment Cost (\$300k to \$2m)
- High Use Cost (\$300/scan)
- High service and maintenance costs
- High false-positive rate



The Etic Perspective

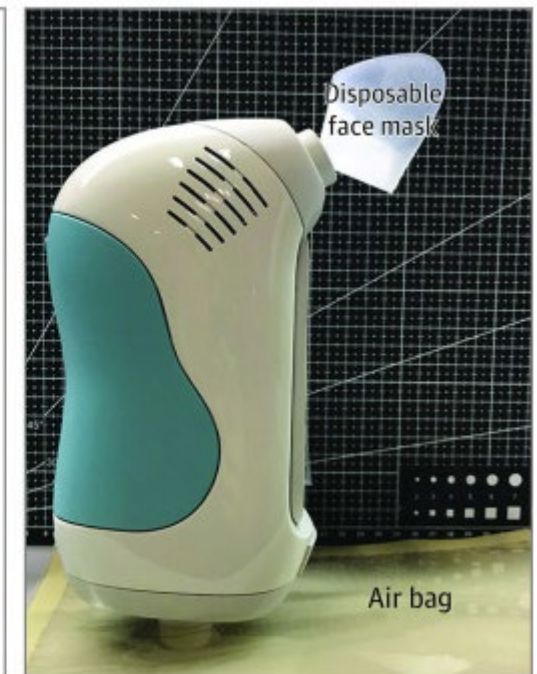
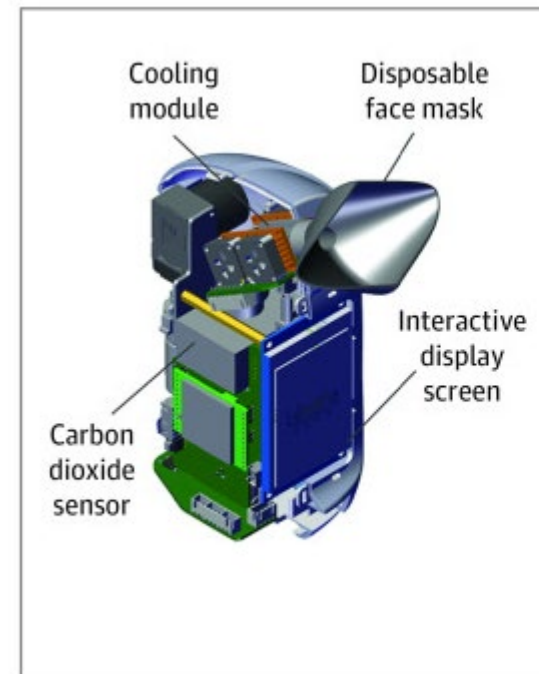
Market Research



Exhaled breath testing with high-pressure photon ionization time-of-flight mass spectrometry (HPPI TOFMS), combined with 'machine learning' has shown promising results in small scale clinical trials (*Healio 2021*).

Positive Predictive Value – 90%

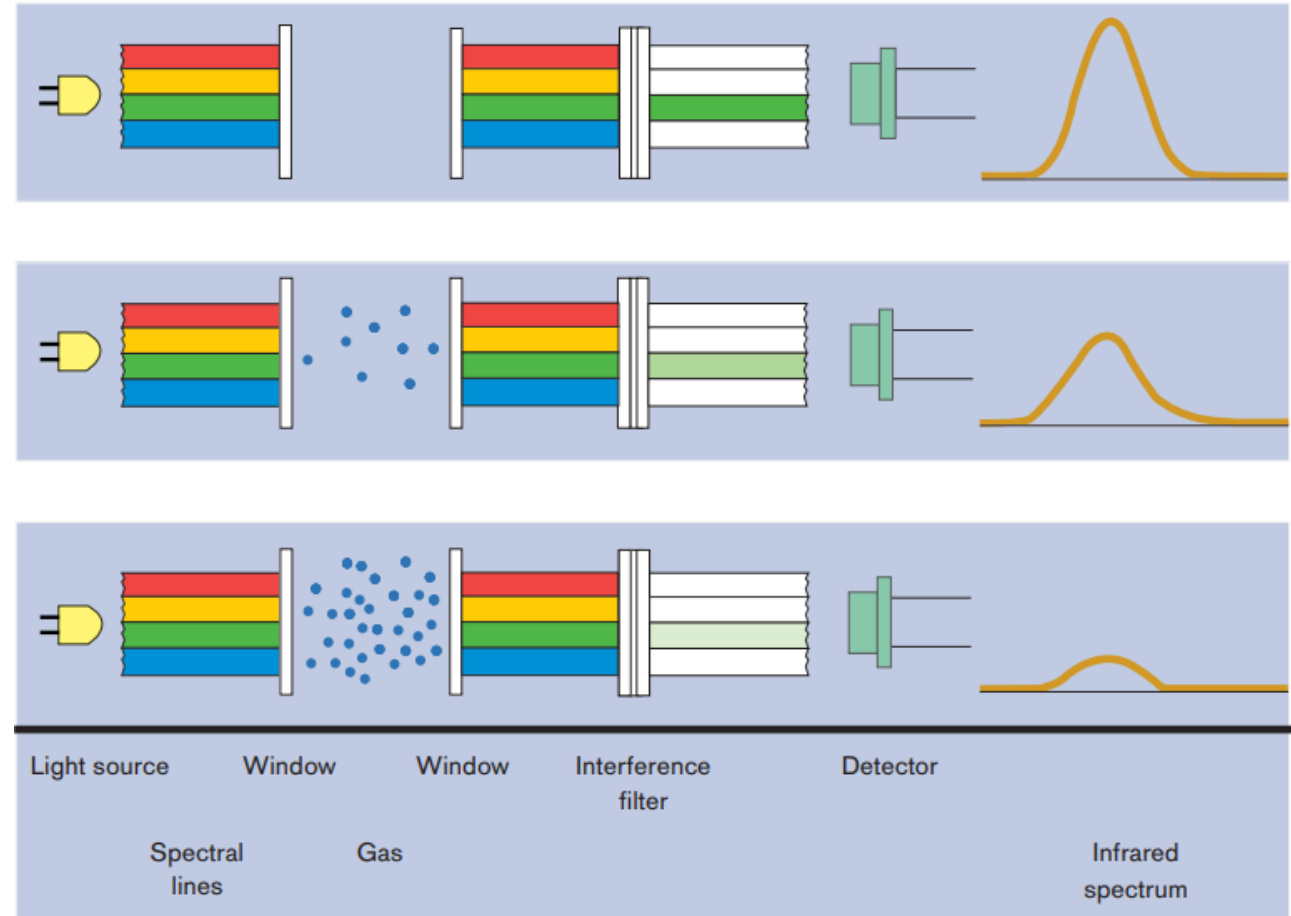
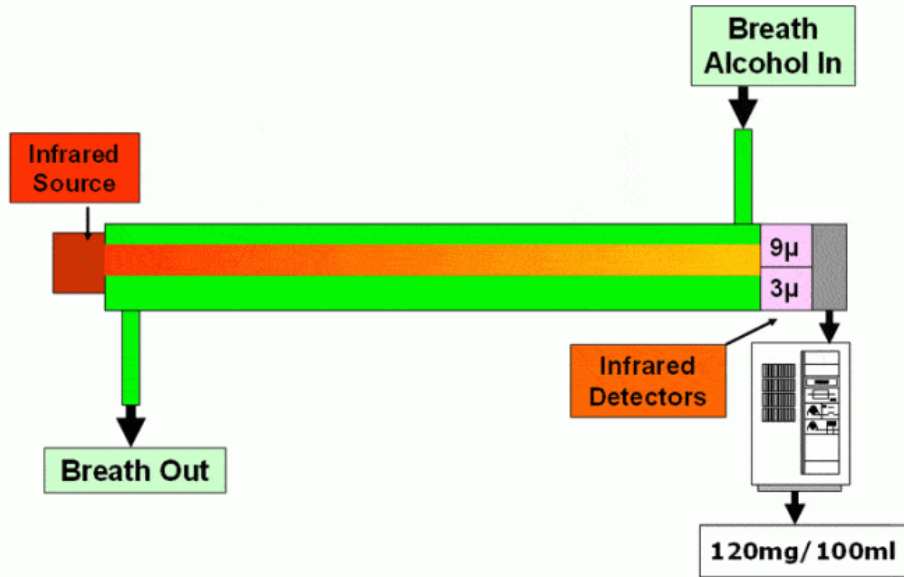
Negative Predictive Value – 100%



The Etic Perspective

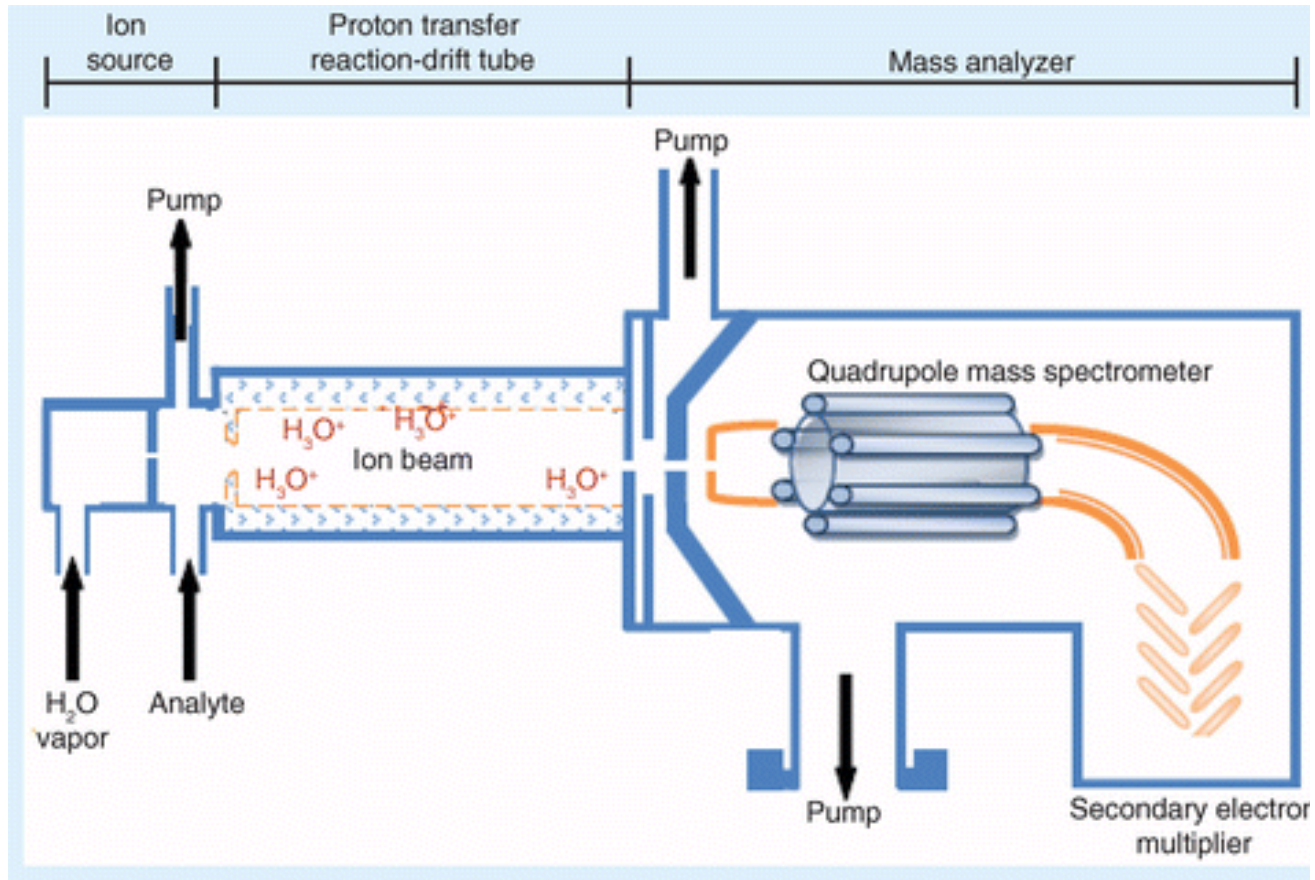
Infrared alcohol detection

Signal is reduced as alcohol presence increases the length of travel of light through the gas.



The Etic Perspective

HPPI TOF Mass Spectrometry



The Emic Perspective



Internal knowledge:

- Team with excellent background in development of hand held portable personal breath analysis equipment (ergonomics, aesthetics, functionality, design for manufacture etc..).
- Experienced at working with legislation and product standards.
- Already supplying equipment to the medical sector.
- Has a global distribution and supply network.

The Emic Perspective

Ethnography:



- When CT scans were first introduced into hospitals, a study by Barley (1986) observed 3 types of behaviour between doctors and technicians:
 - Collaboration
 - Professional Dominance
 - Occupational Separation

Learning from the last two behaviours was severely limited

Value Proposition



Who is the customer:

Is it the National or Local Health Service?

Is it the GP?

Is it the potential patient?

Is it all 3?

What are their pain points:

Doctors need to trust results.

People need early diagnosis for best chance of survival.

Identification of high risk groups

What are the potential gains:

Reduced waste – unnecessary CT Scans and false positive diagnosis.

Early accurate positive diagnosis – 5yr survival rate increases to 63%

Value Proposition



The New 4 Step Process:

Step 1 - Breath test.

Step 2 - liquid biopsy, for VOC markers.

Step 3 - CAT scan to locate cancer.

Step 4 – Full biopsy.

REFERENCES

- * Cooper, R. G., & Kleinschmidt, E. J. 1993. Major new products: What distinguishes the winners in the chemical industry? *Journal of Product Innovation Management*, 10: 90- 111.
- * Cooper, R. G., & Kleinschmidt, E. J. 1987. New products: What separates winners from losers? *Journal of Product Innovation Management*, 4: 169-184
- * Eisenhardt, K. M., & Tabrizi, B. In press. Accelerating adaptive processes: Product innovation in the global computer industry. *Administrative Science Quarterly*.
- * (Piercy, 2012) Piercy, N., 2009. Market-led strategic change. 4th ed. p.312.
- * Zirger, B. J., & Maidique, M. 1990. A model of new product development: An empirical test. *Management Science*, 36: 867-883
- * <https://www.medicaldevice-network.com/sponsored/detecting-lung-cancer-through-breath-technology/>
- * OECD – Health at a Glance 2020.
- * Revisiting Barley’s Study of CT-Scanning Implementations, Sloan School of Management, Black et al, 2018
- * Early Detection of Lung Cancer in China: The Immediate Imperative, Veeraraghavan et al, Wiley Online Library, 2015

REFERENCES

- BCC Research, (2020). *COVID-19 Diagnostic Services: Global Markets*. Available at: <https://www.bccresearch.com/market-research/medical-devices-and-surgical/covid-19-diagnostics-market-report.html>. [Last accessed 27th March 2022].
- Brown University, (2021). *Researchers develop an RNA-based breath test to detect COVID-19*. Available at: <https://www.brown.edu/news/2021-12-14/bubbler>. [Last accessed 27th March 2022].
- Cancer Research UK, (2019). *Clinical trial launches to develop breath test for multiple cancers*. Available at: <https://news.cancerresearchuk.org/2019/01/02/clinical-trial-launches-to-develop-breath-test-for-multiple-cancers/>. [Last accessed 27th March 2022].
- Diabetes, (2016). *Development of breathalyser test to monitor blood glucose levels begins*. Available at: <https://www.diabetes.co.uk/news/2016/jan/development-of-breathalyser-test-to-monitor-blood-glucose-levels-begins-98231296.html>. [Last accessed 27th March 2022].
- Fortune Business Insights, (2021). *Blood Glucose Monitoring Market*. Available at: <https://www.fortunebusinessinsights.com/industry-reports/blood-glucose-monitoring-market-100648>. [Last accessed 27th March 2022].
- IET, (2022). *Covid-19 'breathalyser' can detect infection in 5 minutes with PCR accuracy*. Available at: <https://eandt.theiet.org/content/articles/2022/02/covid-19-breathalyser-can-detect-infection-in-5-minutes-with-pcr-accuracy/>. [Last accessed 27th March 2022].
- ITA, (2022). *United Kingdom Safety and Security*. Available at: <https://www.trade.gov/country-commercial-guides/united-kingdom-safety-and-security>. [Last accessed 27th March 2022].
- Kentish, B. (2017). *Scientists develop first ever breathalyser test for drugs*. Available at: <https://www.independent.co.uk/news/science/scientists-develop-breathalyser-drug-test-limit-alcohol-methadone-university-of-gothenburg-a8099186.html>. [Last accessed 27th March 2022].
- Mordor Intelligence, (2022). *BREATHALYZERS MARKET - GROWTH, TRENDS, COVID-19 IMPACT, AND FORECASTS (2022 - 2027)*. Available at: <https://www.mordorintelligence.com/industry-reports/breathalyzers-market>. [Last accessed 3rd April 2022].
- Northpoint Seattle, (2018). *Instant Results: Introducing the First Ever Breathalyzer Test for Drugs*. Available at: <https://www.northpointseattle.com/blog/instant-results-introducing-first-ever-breathalyzer-test-drugs/>. [Last accessed 27th March 2022].
- Tommy's, (2017). *Carbon monoxide testing is not just for pregnant women who smoke*. Available at: <https://www.tommys.org/pregnancy-information/blogs-and-stories/im-pregnant/pregnancy-news-and-blogs/carbon-monoxide-testing-not-just-pregnant-women-who-smoke>. [Last accessed 27th March 2022].