

Bio-security technology – linking the threat with the solution

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Smiths Detection: high technology products for high profile markets

Technologies for aviation and border security and to protect critical infrastructure



Millimetre wave



Checkpoint X-Ray



Explosives Detection System



Sensor management



Cargo X-Ray



Explosives Trace Detection

Searching for: explosives, weapons & contraband in a wide range of markets

Laboratory science in the hands of Emergency Responders & the Military



Searching for and protecting against: chemical, biological, radiological, nuclear and explosive threats in two closely aligned markets

Areas for consideration



The industry challenge of low probability/high impact threats



The strengths of SME's and larger companies in bio-security



Examples of industry collaboration to bring bio-security technology to market

The challenge of Lo Probability/Hi Impact threats

One type of company strategy matrix

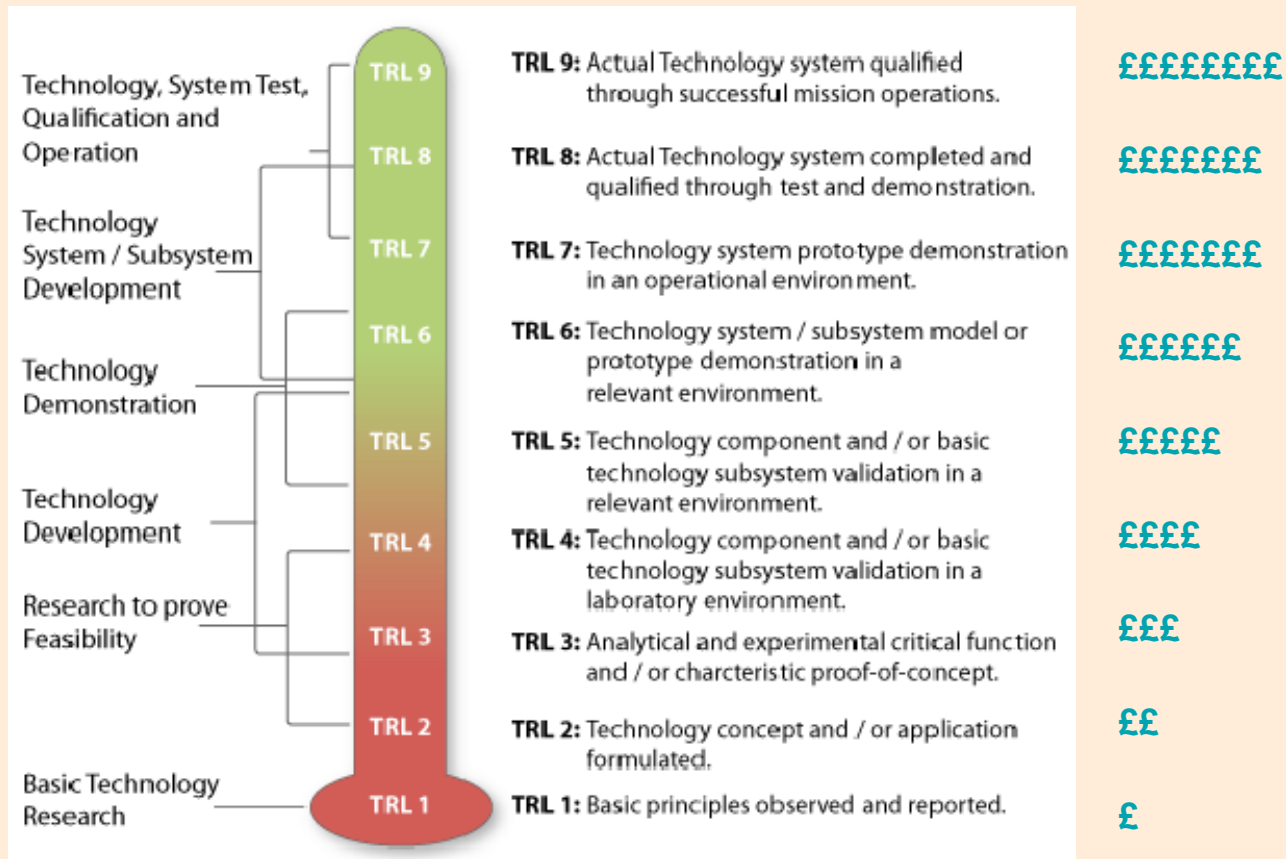
Impact of threat	Hi	???????	Broad investment in technologies and products
	Lo	Do not invest	Selective investment
		Lo	Hi

Probability of threat

- Challenges of bio-security technology investment**
- Long time to market
 - High investment cost
 - Uncertain customer priorities

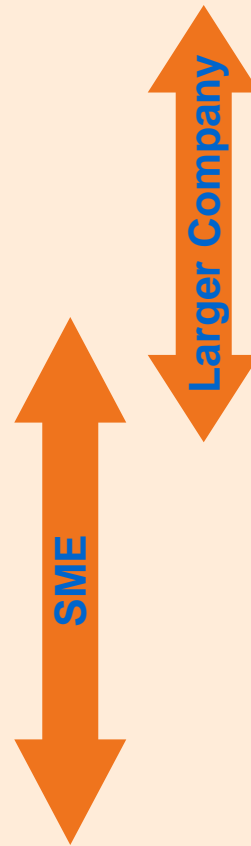
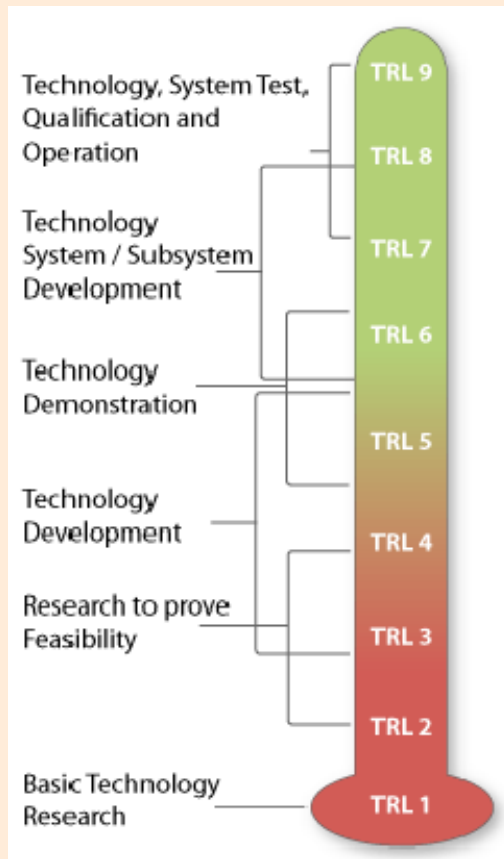
Company business cases show high risk for bio-security technology investments

High cost of launching a bio-security technology



Few SME's can make afford to take a technology through the entire life cycle

SME's and larger companies may have different comfort zones



Typical large organisation skills

- Design For Manufacturing
- Manufacturing scale up
- Project management
- Sales/Distribution
- Customer support

Typical SME skills

- Technology innovation
- Rapid development
- Flexibility
- Customer intimacy

Partnership between the SME and the large company may be beneficial

In this environment SME's and larger companies typically have a different focus

Larger company will want to be

- Solution provider
- Customer/market focussed
- Looking for diverse range of technologies to anticipate wide range of threats

The larger company will have a limited appetite for investment in research and new technologies

The SME will want to be

- Technology provider
- Product focussed
- Looking to get it's technology to market

Having developed it's technology the SME will have limited resource for manufacturing development and commercialisation

Types of partnership

- Partnerships are formed between companies in many ways:
 - Sub-Contract development project
 - Technology Licence
 - Joint Venture, Strategic Alliance
 - Distribution agreement
 - Acquisition
- Selection of the correct type of alliance is important for success

Effective relationship management is essential

Partnership example 1 – Distribution agreement

For Bio Response:

- No one product available that can cover the complete bio-requirement
- New APPROACH required to systematically and efficiently assess the bio-threat in the field
- Complementary products brought together to provide an overall solution



Need a new approach to assess bio-threat in the field

BIO-ACT™ – An example of a distribution partnership

Flow chart for bio-threat evaluation



HazMat ID Ranger™ – hand-held FTIR
Chemicals, hazardous materials, protein

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BioCheck™ – Suspicious powder screening kit
Biological material (by protein and pH methods).

20/20 Bioresponse



PrimeAlert™ – 2 rapid bio tests:
• Microbes
• Toxins as (Ricin, SEB and Botulinum Toxin)

GenPrime



BioSeq PLUS™ Bio-identifier.
High threat BWA identification

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Partnership example 2 – Acquisition of an SME

CBRNe Solutions – Surveillance and monitoring

- Monitoring of air to provide timely warning of a threat
- Output combined with intelligence and bio-surveillance information, met data, other sensors etc



SmartBio™ Sensor: an example of a technology acquisition



The SmartBio™ Sensor is a continuous, real-time detector of biological agents (including microbes, bio-toxins and genetically modified agents) in ambient air.

- Acquisition of SME
- Technical feasibility had been proven pre- acquisition
- Product was developed and manufactured by Smiths Detection post acquisition

Key message box (optional)...

Partnership example 3 (not Bio-security) : Technology licensing

Responder Raman Product Line

Licensed Technology from DeltaNu in 2005

- Launched the Responder RCI in 2006
- Repackaged for stability and manufacturability in 2008
- Created the Responder Bottled Liquid Scanner (BLS) for TSA in 2009
- Redesigned the BLS to match other Smiths AVSEC products in 2010

2005



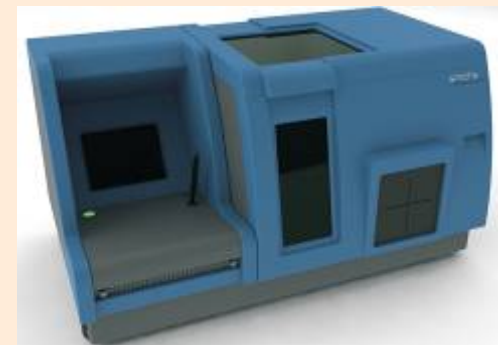
2008



2009



2010



Partnership example 4 (not Bio-security): Development partnership

GC/MS (Gas Chromatography / Mass Spectrometry). Rugged system for field analysis of complex mixtures

Technology licensed from partnership with Torion Technologies (Salt Lake City, Utah) 2007

- Exclusive license for security market
- Co-development product with Torion
- Smiths purchase core GCMS sensor form Torion
- Smiths design enclosures, assemble, test
- Product launch expected 2011



GC/MS System (in development)

Summary



Low probability/high impact threats present particular problems for industry investment



The full cost of bringing a bio-security product to market is often under estimated



SME and larger companies often have complementary skills



There are a number of models which combine these skills for mutual benefit – to bring product to market more quickly

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bringing technology to life



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