



# Knowledge Transfer Account

## Using Patents to lever Research

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# Research is 'done' – so what's next?



- IP protected
- Patents granted
- Ideas for applications are emerging
- How do research outcomes turn into commercially viable products and ventures?

## Hurdles to face

- Academic interest
- follow-on funding
- Identify demand/Market pull
- Identify potential partners
- Demonstrator/prototype
- MONEY!
- Funding vehicle
  - Licence
  - Spin-out
  - Sale of patents

# EPSRC and Knowledge Transfer

- Well recognised disconnect between funding research and exploitation of the outcome of individual projects
- Research generates knowledge, data and ideas for further research
- Facilitation of processes to exploit research is essential
- In 2008 EPSRC allocated £55m of the TOWARDS BETTER EXPLOITATION programme to development of Knowledge Transfer Accounts





# Knowledge Transfer Account KTA

- Call for outline bids end 2007, invitation to submit full application mid 2008, deadline Nov 2008, successful programmes announced March 2009, funding to commence October 2009
- Programme specifically excluded funding of new research, application to be presented as a business case for exploitation of original research funded by EPSRC
- Open playing field, to connect potential users of EPSRC funded research with concepts, technologies and people developed through the KTA to benefit UK economy and society
- For real impact minimum bid within a business case was £2m



## Drivers for KTA application

- ✿ Establishment of active Knowledge Transfer culture at Exeter through Higher Education Innovation Fund (HEIF) since 2001
- ✿ Existence of small, yet world class research niches in Physics and Engineering with little high value follow-on funding in prospect
- ✿ Development of the University of Exeter Science Strategy
- ✿ Specific fit with Functional Materials, fundamentals to manufacture FM<sup>2</sup>

## Drivers for KTA application 2

- ✿ History of substantive funding in Electromagnetic Materials – more than 20 years
- ✿ Experience of leading large multi partner collaborations in Europe
- ✿ Key discoveries in sub wavelength structured metallic materials, relevant to stealth/communications applications, auxetic materials for containing bomb-blast damage, control of magnetism at the nanoscale
- ✿ Potential partners - Hewlett Packard, Sharp, Seagate, Imerys, DSTL, British Aerospace – and QinetiQ.

# Business case development at Exeter



- Appoint project manager for the bid in Research & Knowledge Transfer Team
- Identify eligible EPSRC research grants
- Engage relevant academics, target and agree external partners to explore opportunities
- Develop draft business case and financial model
- Gain endorsement from senior management of all parties



# QinetiQ



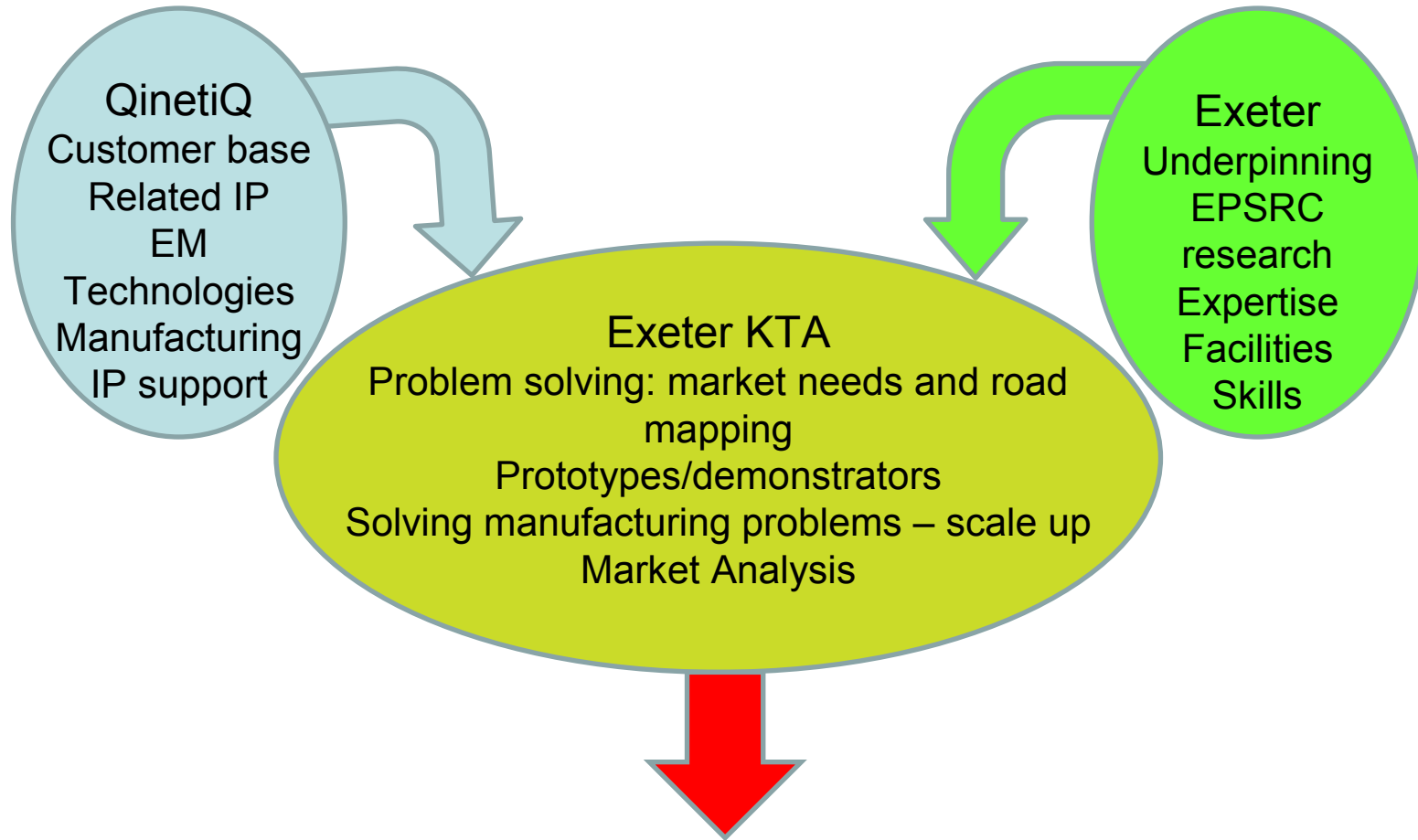
- ✿ QinetiQ was quick to respond to the opportunity, having maintained patents developed with the University over a number of years, but without the capacity to examine potential markets.
- ✿ Rapidly concluded that the KTA Business Case could be developed as an exclusive partnership between Exeter and QinetiQ
  - Dedicated Smart Materials team within Applied Technologies group
  - Technical focus well aligned with Exeter expertise base in relevant research
  - Well developed customer base in QinetiQ
  - Sole partnership with QinetiQ could enhance existing relationships with other organisations of either partner



# Tailored Electromagnetic Solutions: the Exeter business case

- ✿ Research background
  - size, scope, history, key strengths, track record
- ✿ Description of activities
  - objectives, potential for change, success measures, metrics
- ✿ Delivery and governance
  - responsibilities
  - risk management
- ✿ Training activities
  - Junior Entrepreneurial Fellowships
  - Knowledge Transfer Partnership
- ✿ Additional support
  - HEIF support reserved for further IP and Commercialisation
  - QinetiQ commercialisation & marketing expertise, customer base, in kind support
  - South West RDA - Innovation Centre Grant housing RKT, Science Park development

# Vision for Exeter's KTA



Investment/Customers



# Objectives of Exeter application Tailored Electromagnetic Solutions -KTA 1



- Assess 6 -10 IP exploitation opportunities present in the Exeter-QinetiQ technology portfolio.
- Consider the optimum strategic route for exploitation of these technologies and select 3 for thorough analysis and presentation as investor-ready.
- Seek first-round investment for three spin-out companies typically of £300K to £3M.

# Objectives of Exeter TES-KTA 2



- ✿ To develop IP based on EPSRC-funded research at Exeter , with an entrepreneur employed to drive market-facing research, develop business plans and secure funding for three spin-out companies.
- ✿ The entrepreneur will be appointed by the University and QinetiQ, and hold a budget dedicated to meeting business-driven requirements for successful exploitation of the existing IP
- ✿ Aim to bring technical solutions to prototype, tailored to the markets needs, and therefore to create compelling offerings for industry.
- ✿ The investment requested could show a return of ~£15M investment in three spin-out companies over the three year period.

# Objectives of Exeter TES-KTA 3



- ✦ Deliver a 2-5 times return on the EPSRC Investment to the benefit of UK plc.
- ✦ Establish an on-going Investor Culture in science for the South West at Exeter focussed on the Innovation Centre and the Science Park.
- ✦ Create a sustainable road-map for activity in UK Functional/Electromagnetic materials research and Knowledge Transfer identified by the lead parties.

# Twelve KTA programmes



 UNIVERSITY OF BATH £3.4m	 University of Glasgow £2.4m	 Queen Mary University of London £2.9m
 UNIVERSITY OF CAMBRIDGE £2.2m	 UNIVERSITY OF LIVERPOOL £3.5m	 The University Of Sheffield. £5.7m
 Durham University £2.7m	 Loughborough University £3.0m	 University of Strathclyde Glasgow £2.6m
 UNIVERSITY OF EXETER £3.2m	 MANCHESTER 1824 £8.3m	 UNIVERSITY OF SURREY £3.9m

Other KTA models £3.4m



- ✿ **A £3.4m award, initially for 3 years, developing innovative ways to accelerate translation of EPSRC research outputs into business opportunities.**
- ✿ **A platform designed for building and fostering strategic relationships**
- ✿ **Flexible approaches which include:**
  - **Creation of Partnership Development Awards covering CPD, KTP and “commercial adoption grants”**
  - **Creation of KT Fellowships to buy in expertise or for academic staff to spend time with industrial partners/end users**
- ✿ **Proof of Concept fund to prove viability of concepts**
- ✿ **Anticipate 10-20 new products/processes being achieved**



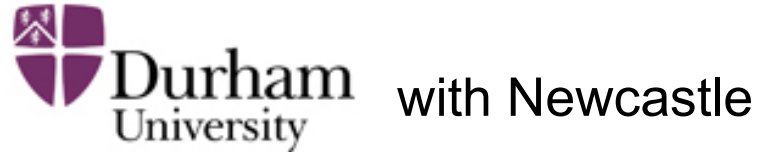
£8.3m

MANCHESTER  
1824



- The Manchester KTA creates a portfolio of flexible support mechanisms to enable researchers to engage in exploitation.
  - joint horizon-scanning to explore technology/problem domains with users, develop novel strategies to solve them;
  - two way secondments between the University and user organisations to identify exploitation opportunities
  - Concept Development and Feasibility awards, to provide evidence base for application of research in a particular field
  - Knowledge Transfer Fellows Scheme, which employs researchers full time to work on immediate research-based problem-solving for a range of companies
  - Awards for the Development of Licensable Technology,
  - Knowledge Transfer Partnerships
- The KTA will also focus on the development of CPD where Masterclasses in a given technology domain will enable users to develop strategies to exploit it.

£2.7m



- Responding to need to pull new developments in materials, sensors and physical techniques into the healthcare sector.
  - A major barrier is a lack of understanding by physical scientists of practical constraints to adoption of technology by clinicians, especially in clinical trials, regulation, ethical approval, methodology and relations with volunteers.
  - Aim to provide a bridge across the clinical/non-clinical divide to facilitate exploitation of basic science and technology.
- Provide a pipeline into North-East Regional commercialisation framework, and the Angel Alliance between Universities of Durham and Newcastle and the RDA, One-North East.
  - Offering workshops to identify new collaborations, to be nurtured and managed by KTA staff and developed with KT Fellows and Associates to prepare projects for external commercialisation.
- Development of KTPs in the healthcare sector, particularly with NHS Trusts.

£3.0m



### **Develop existing academic staff**

- engender culture change, toward exploitation of research, add prestige to KT activity, improving chances of exploitation
- accelerate staff towards an academic career in which exploitation features prominently
- Provide opportunities for KT skills training to research staff

### **Better Exploitation**

- Focus on exploitation throughout the lifespan of research projects.
- Bridge gap between end of research project, and interest from external funders

### **User Engagement**

- Create mechanisms to ensure that research is informed and inspired by the context of use.
- Build partnerships with users, characterised by multiple interactions with the research base.
- direct placement of skilled researchers with collaborating research users, increasing flexibility to encompass a broader range of career levels, and allowing for exchanges in either direction.

£2.9m



- Develop a career transition path from a post-doctoral research assistant role to one in industrial R&D
  - Career Path Industrial Scholarships: KT projects with industry for postdocs scientist and engineers while testing viability of an idea or process, mentored by senior researchers .
  - Early Career Academic/Industry Interactives: for young career academics ,flexible KT projects with industry partners. Adding 2 courses to their PGCAP programme.
  - KT First Exposure: 6 month KT projects for Ph.D. students their supervisor and an industry partner. They will be based >50% at the partner.
- Full KTPs
- Developing Time for KT: Teaching buy-out to pursue a viable KT project with industry involving young scientists and engineers.
- Interaction events for QMUL researchers and industry partners
- Develop an accredited KT qualification for academic researchers

£2.2m



with Bath, Nottingham ,

Exeter and Cranfield



Development of product-related services for research outputs, bridge the knowledge transfer gap, specifically in relation to engineering-based services, to turn the new knowledge created into practical tools and techniques

1. Identifying research outputs that can be developed into tools.
2. The creation of the tools by a dedicated team of tool developers.
3. The piloting and refinement of tools with industrial partners and other companies.

£2.5m



- Marketing & relationship building to improve communications, and promote engagement
  - innovation sandpits with potential industry partners,
  - evaluate IP through Industrial Star Chambers
  - facilitate closer interaction between academics and industry through collaboration events around the UK and a seminar series.
  - employ Technology Translators
- Funding mechanisms:
  - Implement Technology Development Fellowships
  - Set up 3 nano-based KTPs.
  - Support some projects to proof of concept/prototype stage create a Product Development/Technology Integration fund
  - Enterprise training for staff
- Training:
  - enterprise training;
  - peer to peer and KT support training, integrated with
  - training given to PGR and researcher community funded

£3.5m



- Create Knowledge Exploitation Laboratory (KEL) to exploit £43m of EPSRC funded research in Molecular Materials (50% of KTA funding), Advanced Engineering (30%) and Sensors and Monitoring (20%).
  - bring together technology users, academics and technology suppliers (i.e. businesses who package the science into practical technology such as scientific instrument makers).
  - undertake development work to increase technology readiness level to proven demonstrated technology for appraisal by users and technology suppliers.
  - accelerate exploitation by reducing both risks and timescales this is evidenced by the attached letters of support. KTA funds will be used for laboratory space and dedicated personnel .
- Business facing resources from HEIF funded Business Gateway, supported by Market Operations Manager to research industries and application areas to assess exploitation potential.

£5.7m



- Foundations for Success - interventions to deliver infrastructure required to develop commercial opportunities from the University's EPSRC portfolio more effectively.
  - management and delivery team; Sector Advisors; Concept funding; a Designer in Residence; innovation training; Knowledge Transfer Partnership funds; marketing and communication capability.
- Flagship Projects to enable a culture shift in the way KT is perceived, valued and delivered.
  - The Virtual Corporate Laboratory to add R&D for product innovations.
  - Development Hot-House - dedicated, flexible, secure laboratory space for collaborative exploitation projects delivered to industrial research standards.
  - Industrial Research Fellowship Scheme to facilitate the transfer of senior academic staff into industry and vice versa, and Industrial Fellowships for early career academics.
  - Made in Sheffield - use of multimedia to promote communication of opportunities from EPSRC research to end-users



£2.6m



- Three linked programmes to escalate company and academic engagement in research exploitation through exchanges between companies and the university, aligned to key sectors: Power and Energy, Chemical and Biotechnology, Advance Manufacturing and Defence, Electronics and Communications, and Healthcare.
  - Company Escalator for relevant UK businesses which will be escalated from Emergent level via a Managed level to a Framework level using a range of exploitation mechanisms such as classic Knowledge Transfer Partnerships, new Research Exploitation Partnerships, Proof of Concept Accelerator funds and internships
  - People Escalator for EPSRC funded staff and escalator company staff, entry-level KT to full exploitation capability, via Knowledge transfer and Innovation Training (KIT), CPD up to Masters level, company start-ups with mentoring support from Entrepreneurs in residence.
  - Culture Escalator to embed appreciation of user organisations to ensure that KT culture change is supported and recognised by academics.

£3.9m



- 3 innovation platforms to be developed namely:
  - communications and signal processing;
  - next generation materials and characterisation
  - nanotechnology and photonics.
- "KE tool-box" to connect with our users;
  - identify appropriate partners and markets for exploitation;
  - accelerate innovation;
  - manage risk;
  - disseminate ideas and firmly embed KE into the heart of the institutional culture.



## Why is Exeter different?

- Sole partnership
- Externally owned ring-fenced patents
- Set up specifically to exploit patents produced by previous EPSRC funded collaborations between Exeter and QinetiQ, supported in interim by QinetiQ at a cost of approx £350k
- Industry focused Lead Entrepreneur seconded into University
- Supporting new 5 theme Science Strategy at Exeter
- RDA supported Innovation Centre with facilities to support management team with embedded Research & Knowledge Transfer support

# The Exeter KTA

- ✦ A Commercialisation Strategy for a small science-base University
- ✦ £3.2M EPSRC Investment to Identify 3 Exploitation Opportunities (EO's)
  - Based upon previous areas of EPSRC research funding
- ✦ KTA Objectives:
  - Assess 6-10 patents for potential EOs
  - Evaluate each EO, then create and implement an exploitation strategy to improve its investment potential
    - typical £300K seed investment by the KTA
  - Seek Start Up Funding for each of the EOs as required
  - Establish an on-going Investor Culture within the University that outlives the KTA grant
    - focussed on the Innovation Centre and the Science park
  - Create a sustainable road-map for UK Functional/Electromagnetic Materials
- ✦ KTA Outputs: Exploitation Opportunities
  - No pre-conceptions about the nature of the EO's
  - KTP Resource requested
- ✦ Investor Culture
  - Provides the foundations for the KTA Legacy
  - Establishes an enthusiastic investor network through regular engagement with high quality investment opportunities

# About QinetiQ



## QinetiQ

- Over 800 patents
- Multi-site and facility operation
- Industry focused
- Knowledge & abilities of over 8,000 scientists
- History of collaborative work with Exeter
- Connections with customers that would otherwise be unavailable to the institution alone

 A leading international provider of technology-based services and solutions to the defence, security and related markets.

 Interactions with and service provider to government organisations, predominantly in the UK and US, including defence departments, intelligence services and security agencies.

 Consultancy services for commercial and industrial customers around the world

# Bringing UoE & QQ together



## Legal document formation

- Collaboration agreement
- Secondment agreements
- Charge rates for consultancy
- Revenue share
- IP protection & information handling policies

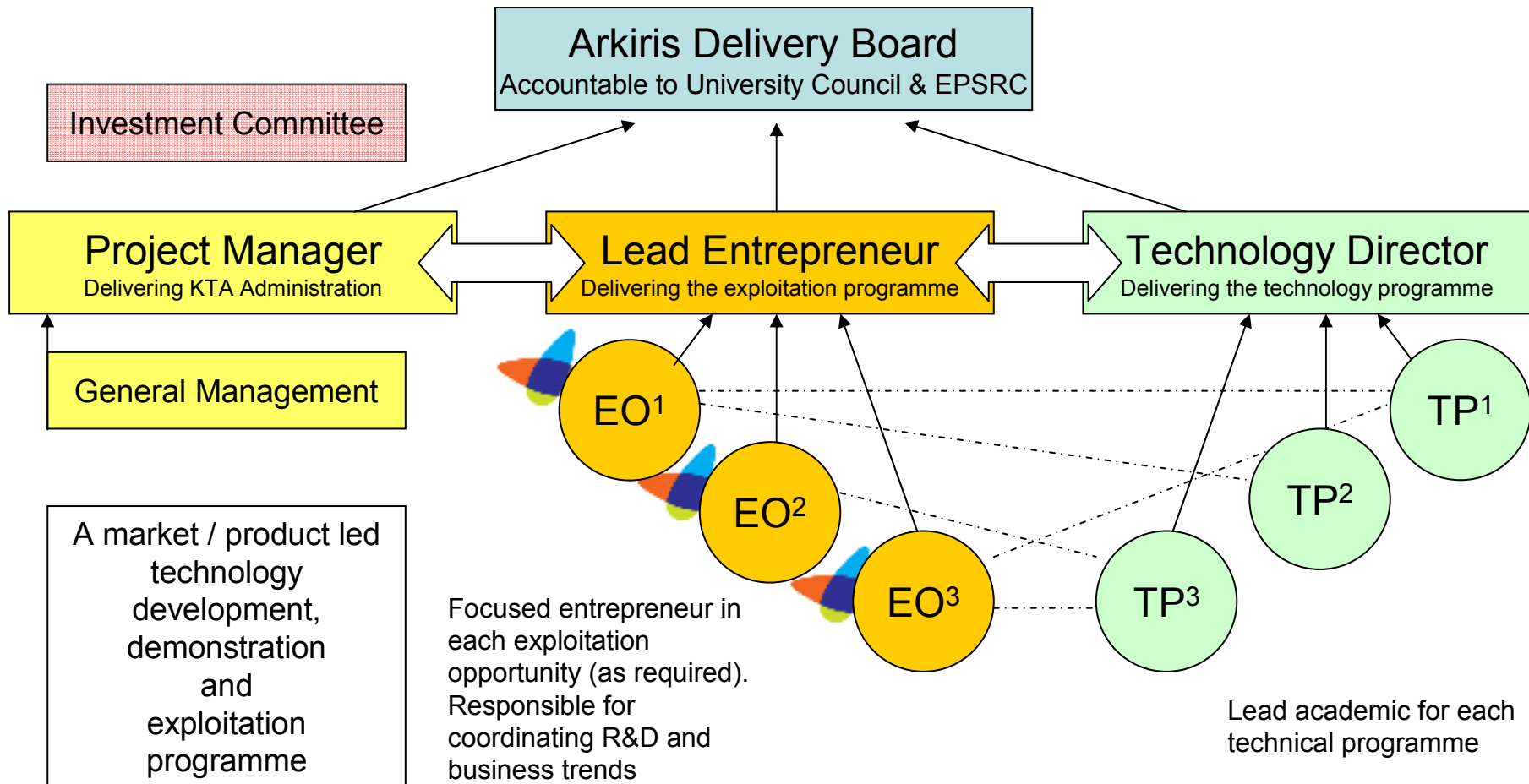
## Governance

- Marrying commercial aims with an educational establishment
- Delivery Board
- Integration

# Competing Objectives

- ✿ Collaboration Agreement negotiations
  - Deciding the team = Meeting of mindsets
  - Fees = Value or rip off?
  - Patents = Land grab or wisdom?
  - Governance = Need to Keep it pro-active and engaged
  - Agreed Exit points
- ✿ Institutional readiness
  - Budgeting and reporting
  - Personal agendas
  - Is the projects vision shared by both organisations?
- ✿ Timescales
  - Call for bids late 2007
  - Nov 2008 application submission deadline
  - Successful programmes announced March 2009
  - Funding to commence October 2009

# KTA Operational Structure





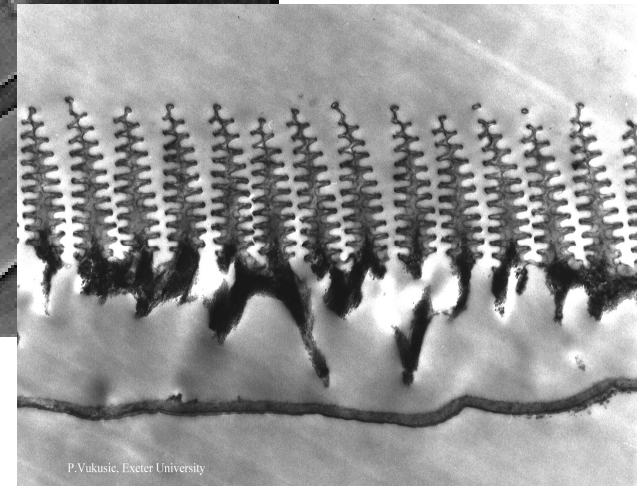
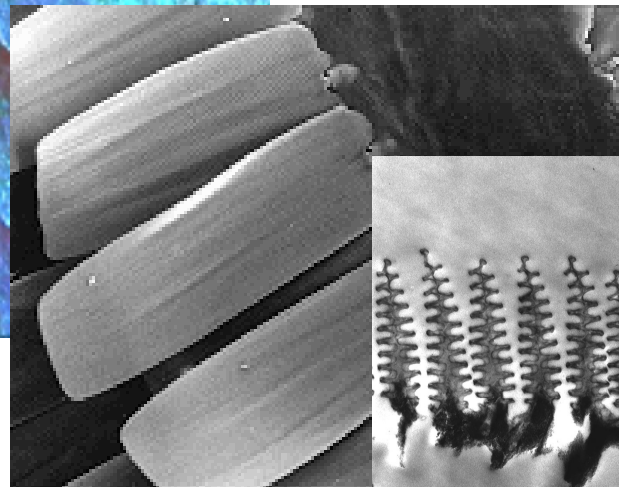
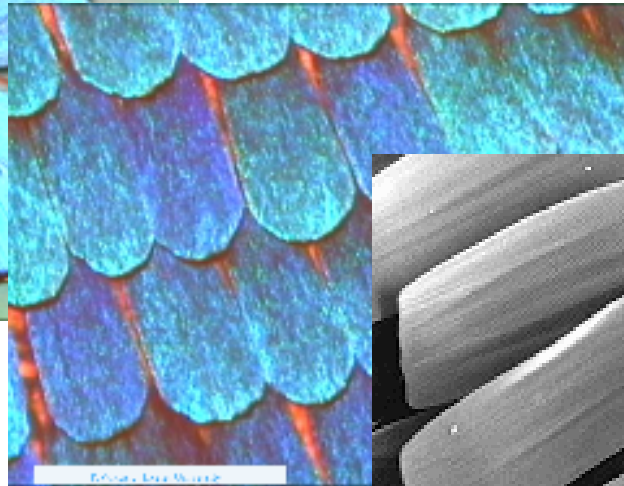
# Work packages

- 5 Work packages
  - WP 0 Management
  - WP 1 Investor Culture
  - WP 2 Discovery
  - WP 3 – 5 Exploitation Opportunities
- EPSRC flexible with budget headings

# Tailored Electromagnetics

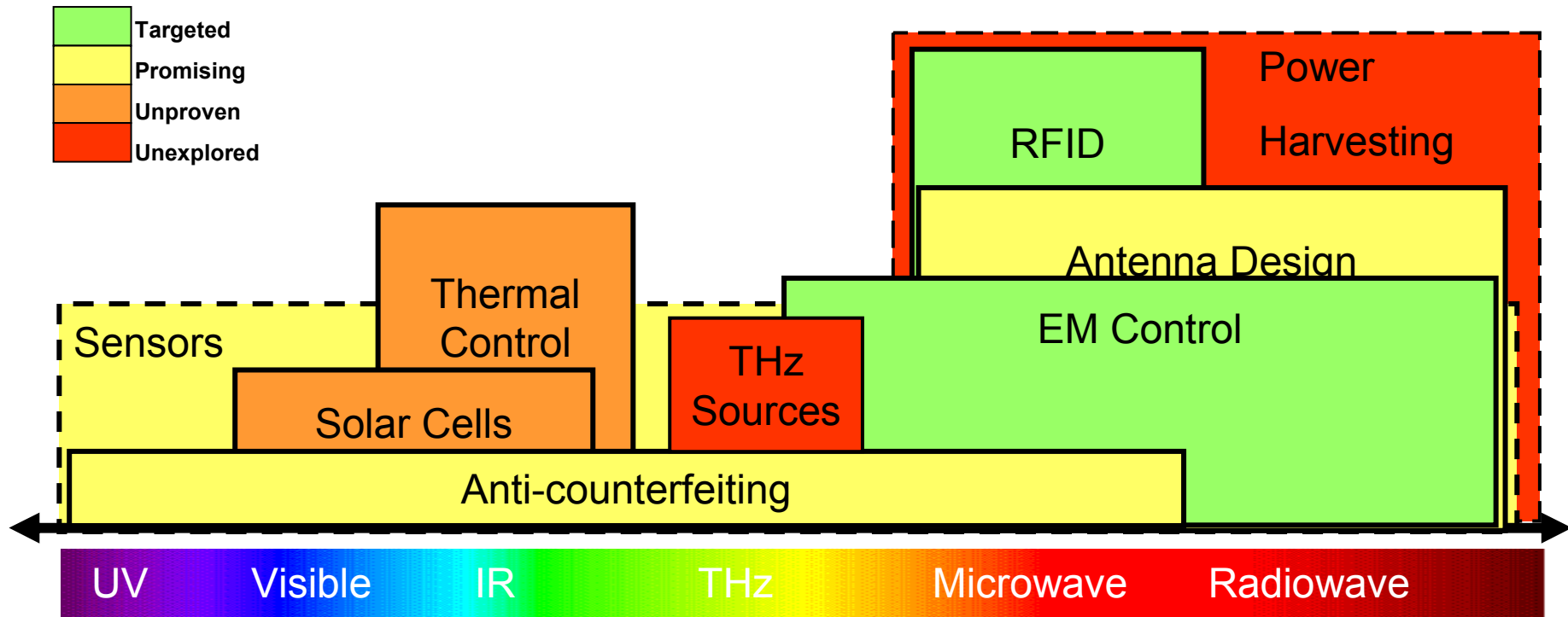


*Morpho didius*

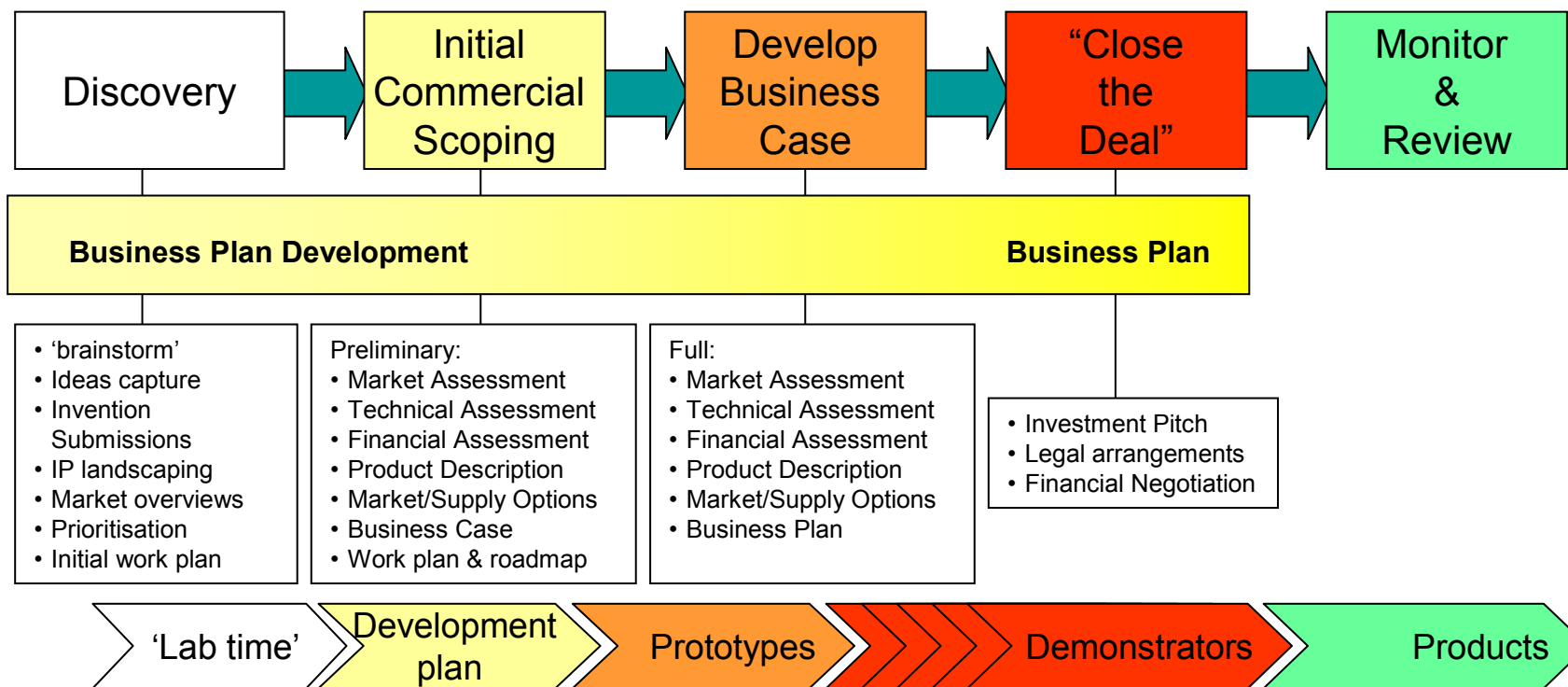


- The wing's surface is covered with rows of overlapping scales
- Each scale is approximately 90 microns wide and 250 microns long
- Interference effects occur when light passes through the branches, since it is partially reflected at each interface

# Potential Exploitation Opportunities



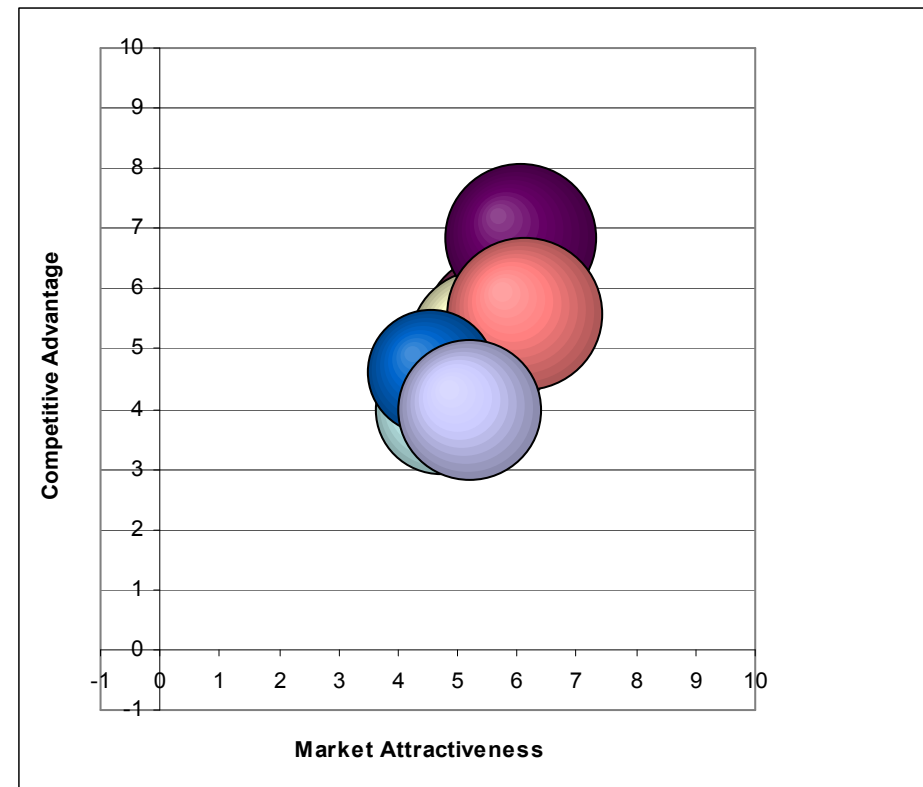
# Exploitation Process



# Arkiris - Tools and Processes



- Implementation of industry best practice
  - Discovery tools
  - Disclosure and reward principles
  - Technology route maps
  - Investment prioritisation
  - Business plan development
- Simple comparative presentation of opportunities
  - Graphical
  - Numerical
  - Informing but not determining subsequent activity
  - Allowing for entrepreneurial flair
- Staged review
  - ongoing informal review
- Engagement of technical community



# Summary Sheets



## KTA Opportunity Prioritisation Scorecard

Product A

Market Attractiveness	Weight	Score*	Result
Growth market (top level)	6%	9	0.56
Growth Market (relevant sub-market)	11%	5	0.57
Market Size	15%	4	0.58
High margin	11%	4	0.46
Sustainability of revenue	11%	3	0.34
Market Maturity	2%	6	0.13
Ease of adoption	5%	7	0.36
Potential for further products	5%	7	0.36
Short time to market	6%	9	0.56
Alignment to KTA strategy	3%	10	0.31
Mix of Service & product in ultimate business	1%	8	0.08
Multiple potential applications	7%	2	0.15
Technology Based Problems	5%	6	0.31
White space' apparent	5%	2	0.10
Regulatory & compliance driven	4%	3	0.13
<b>Total</b>	<b>100%</b>	<b>85</b>	<b>5.02</b>

\*Score from 1 to 10, where 1= worst situation, and 10=best  
Scoring reference table provided on "KTA Criteria" tab

### Competitive Advantage

	Weight	Score*	Result
Funds and resources available	5%	9	0.46
Low KTA investment required	2%	9	0.18
Alignment to existing skills	3%	5	0.15
Intellectual Property in place	8%	6	0.49
Ability to create new Intellectual Property	5%	2	0.10
Manufacturer identified	5%	6	0.26
Go to market partners identified	11%	1	0.11
Credibility in the market	4%	2	0.08
Existing Engagement with lead Customer	5%	2	0.10
Ease of Purchase	4%	4	0.16
Unique customer benefit	8%	1	0.08
Cost Competitive Solution/ Value for None	13%	5	0.66
Technology Maturity	9%	6	0.55
Ease of implementation	16%	5	0.82
0.00	0%	0	0.00
<b>Total</b>	<b>100%</b>	<b>62</b>	<b>4.21</b>

### Risk

	Weight	Score*	Result
KTA funding limited	9%	8	0.75
Availability of Investor Funding	13%	2	0.26
Loss of key people & partners	9%	9	0.85
Litigation	4%	9	0.32
IP infringement	14%	9	1.27
Missed the opportunity or it wasn't there	11%	3	0.32
Wrong skills mix within KTA	5%	5	0.24
Timely Decisions made	15%	4	0.61
Sales cycle too long	7%	4	0.28
Customer need superseded	6%	5	0.29
Competing solutions emerge	7%	1	0.07
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
<b>Total</b>	<b>100%</b>	<b>59</b>	<b>3.26</b>

### Reward

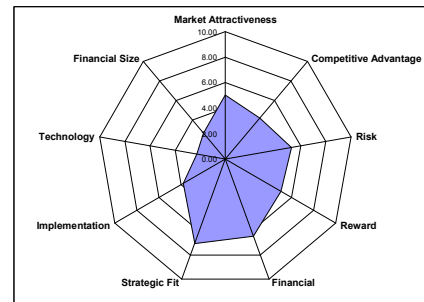
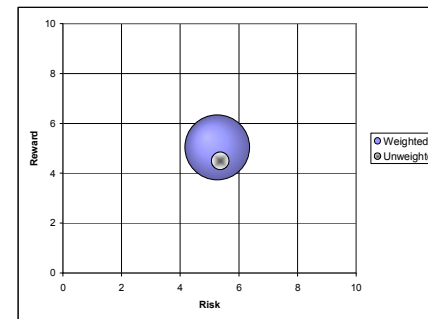
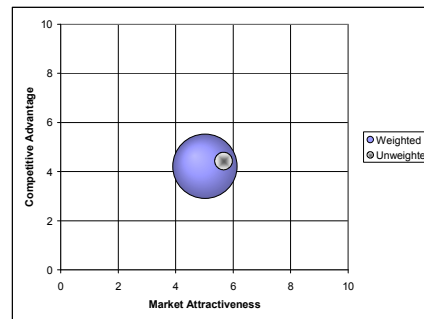
	Weight	Score*	Result
Revenue growth	22%	4	0.88
Potential for further research	8%	3	0.25
Job satisfaction	7%	3	0.21
Potential for Spin out	14%	3	0.41
Increase in KT reputation	19%	7	1.34
Team/personal recognition	1%	3	0.04
Brand profile improved	10%	6	0.58
Increase in customer engagement	19%	7	1.34
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
0.00	0%	0	0.00
<b>Total</b>	<b>100%</b>	<b>36</b>	<b>3.04</b>

### Financial Sizing based on market attractiveness Financial score

	Financial	Strategic Fit	Implementation	Technology	Total
Weighted					
Market Attractiveness	2.65	1.47	0.36	0.54	5.02
Competitive Advantage	1.64	1.09	0.11	1.37	4.21
Risk	1.01	0.55	3.33	0.36	5.26
Reward	1.12	3.52	0.00	0.00	5.04
<b>Total</b>	<b>6.4</b>	<b>7.0</b>	<b>3.8</b>	<b>2.3</b>	

	Financial	Strategic Fit	Implementation	Technology	Total
Average					
Market Attractiveness	2.07	2.40	0.47	0.73	5.67
Competitive Advantage	2.57	1.00	0.07	0.79	4.43
Risk	3.64	1.27	0.45	0.00	5.36
Reward	2.88	0.88	0.75	0.00	4.50
<b>Total</b>	<b>11.16</b>	<b>5.58</b>	<b>1.74</b>	<b>1.52</b>	

Market Attractiveness	5.02
Competitive Advantage	4.21
Risk	5.26
Reward	5.04
Financial	6.42
Strategic Fit	7.03
Implementation	3.81
Technology	2.27
Financial Size	2.65



# Radio Frequency Identification (RFID)



- RFID is on a growth track with market analysts estimating a market value of £25bn by 2017 through sustained 20% per annum growth.
  - Lack of RFID full solution suppliers in UK and Europe
  - High installation costs
  - Poor operation in harsh environments
- RFID is predicted to lead the next generation of asset identification and tracking, providing cost and efficiency savings within supply chain and inventory management.
  - New product development required to better service industry and applications
  - Control of environment required to improve read rate and fidelity
  - Ease of deployment a key factor

# Electromagnetic Control



- ✿ Increasingly widespread adoption of wireless technology used in every aspect of day to day life leading to:
  - Signal drop in mobile coverage
  - Slow Wi-Fi operating speeds
  - Dead zones, signals disappear when moving through a building
- ✿ Growing demand for ‘Wireless Friendly’ solutions in buildings leading to:
  - Requirement for improved architectural design tools to get fundamentals of building design correct
  - New advanced materials to remedy problem for both new and retro-fit applications
  - Member of the **Wireless Friendly Building Forum**



# Exploitation Routes



- 🌈 Licence
- 🌈 Joint Venture
- 🌈 Spin Out
- 🌈 Sale



# Licensing

## Difficulties

- Requires market understanding
- Needs a competitive knowledge
- Hard negotiation skills
- Needs prosecution against infringers
  - Barristers & Courts cost money

## Benefits

- One off lump sum or ongoing royalty income
- Hands over the business development
- Quick exit
- Cheaper

# Joint Venture



## Difficulties

- Finding the right partner
- New business formation
  - Subject to state aid rules
- Cutting the deal
- Exit

## Benefits

- Facilities & Capabilities
- Experienced Partner
- Customer base

# Spin Out



## Difficulties

- Attracting required investment
- CEO & supporting management team
- New product development
- Unlikely to stick to plan
- Pressure to Exit
- Poor history of survival

## Benefits

- Potential for high return
- Long term growth potential
- Excitement & Fun!

# Arkiris



- ✦ External facing 'brand' for University exploitation
  - to promote the KTA within the investor community
  - provide a vehicle for enhancing exploitation that is maintained past the lifetime of the KTA grant
- ✦ Key Aspects
  - Arkiris branded investment process
    - Use of best practice with exploitation community
    - Targeting key priorities of both the Investor community and the University strategy
  - Suite of 'branded' tools and processes
    - To generate and evaluate candidate EO's
    - Nurture their technical and commercial development through the early exploitation stages
    - To create high value investment opportunities
  - Seed funding of c. £300k to mature investment opportunities to the point of securing external Start Up funds
- ✦ Direct engagement with business
  - Major industry in target market space to guide investment priorities and potentially be the lead exploiter
    - QinetiQ as partner in the KTA project and launch of Arkiris
  - Local and regional business as potential investors and supply chain partners

KTA Brand



arkiris



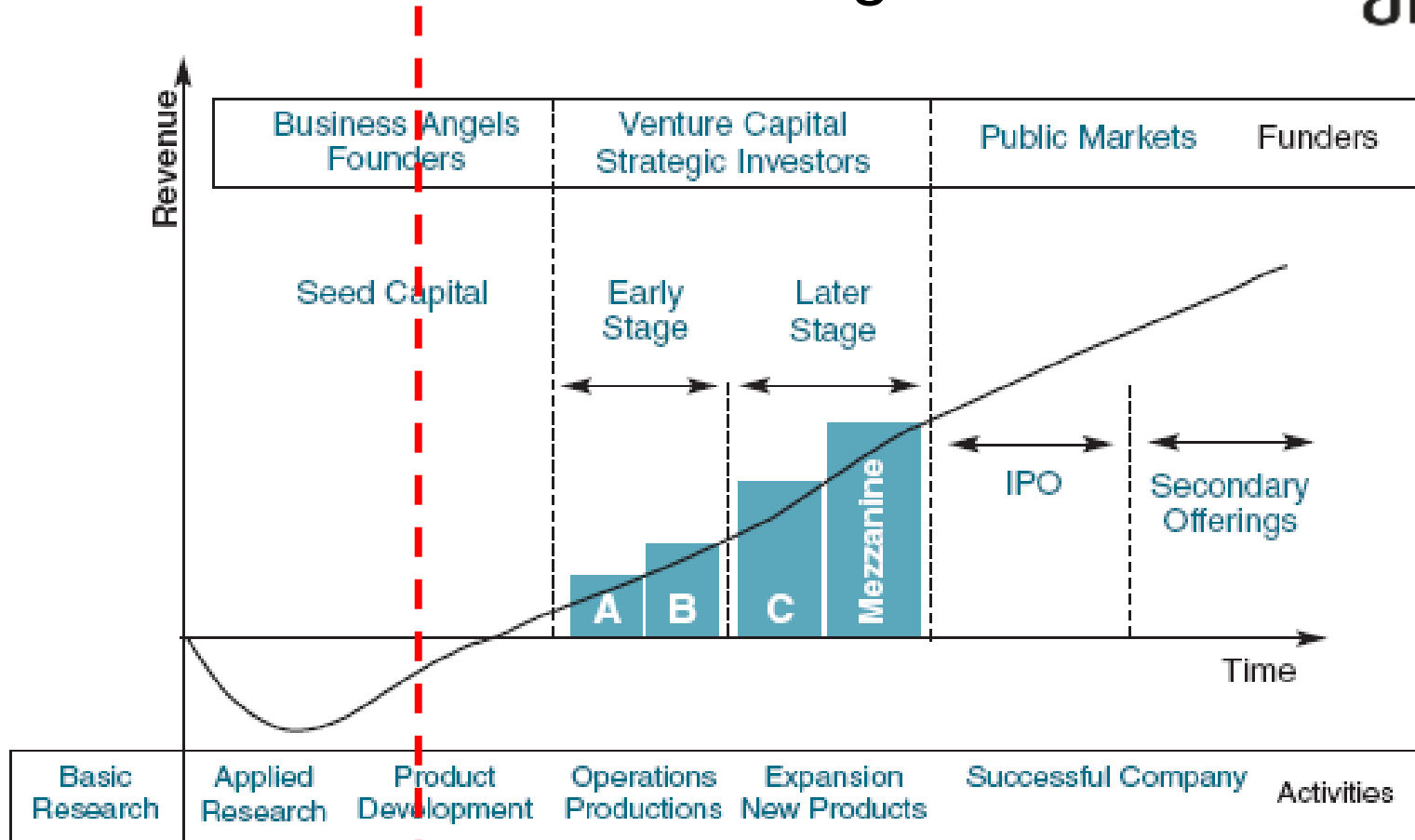
Commercial in Confidence

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# Investor Culture - Objectives

- 🌈 Seek Start Up Funding for each EOs as required
  - Establish investment brand – Arkiris
  - Establish an initial network of ‘trusted’ investment advisors
  - Engage wider Investment community (both regional and national)
- 🌈 Establish an on-going Investor Culture within the University, that outlives the KTA grant, focussed on the Innovation Centre and the Science Park
  - Demonstrate the integration with and enhancement of University exploitation processes
  - Create an opportunity pipeline that extends beyond the 3-year KTA grant
  - Align the KTA timeframes and achievements to support the IC and SP goals
  - Explore the potential to extend Arkiris into a stand alone Seed Investor with an associated evergreen fund

# Arkiris Position in the Funding Market



**Arkiris**





# Disclosure Process

## Online Disclosure Proposal – to establish Deal Flow

- In collaboration with the University Research & Knowledge Transfer (RKT) office, an online inventions disclosure submission process has been created
- College facing RKT Manager, in conjunction with the inventor, compile a short initial report
- Following the ‘Arkiris process ‘ evaluate the strength of the disclosure
- Conduct IP searches
- Competitor analysis
- Make recommendations for next steps
  - Further funding, IP protection, seek grants, etc
- Monitor exploitation progress



# Technology to Achieve...



- ✦ Embedded World class scientists sharing new relevance through Exploitation
- ✦ Linked to Industry with QinetiQ - The Global Defence and Security Experts
- ✦ Discovery budget to allow unrestricted innovation
- ✦ Applied research
- ✦ Prototype development

## Positive Effects

- ✿ A clear technology exploitation process for the University
  - Roadmap
  - Toolkit
  - Strengthened relationship with major industry collaborator(s)
  - Engagement with external investment
- ✿ Value for UK PLC & EPSRC
  - New joint grant applications submitted through foreground IP generation
  - Disclosure of funded research and inventions
  - New long term relationships with businesses through KTP's
  - UK skills retention & job creation
- ✿ Academic engagement
  - Better understanding about commercialisation and its future role in Universities
  - Private industry is not the enemy

# Summary

- ✿ Through sharing this knowledge with Prottec we hope you have a clear understanding of:
  - How patents can generate further research income
  - The process of forming a joint venture collaboration
  - An example of an industry focused commercialisation process
  
- ✿ An understanding of the importance of:
  - Institutional readiness
  - Collaboration agreements
  - Academic engagement
  
- ✿ The benefits to educational establishments and industry partners through working together
  
- ✿ [www.arkiris.co.uk](http://www.arkiris.co.uk)