

Developing a Spin-Out Company

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Developing a spinout company

- Why set up a business?
- What does it mean to CERN staff?
- The six prerequisites
- Raising money
- Support for your business



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Axomic charts the course for architects

- Advanced data management and data mining tools developed at CERN for managing the huge data libraries resulting from high energy physics experiments are being used in architectural practices and engineering consultancies for storage of technical drawings, sketches and photographs.

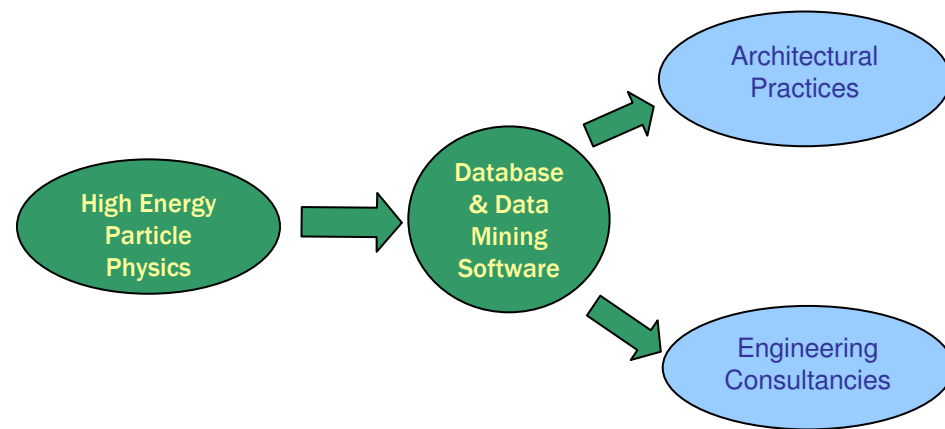


Axomic charts the course for architects

- Axomic was set up 2002 to apply the techniques of managing massive data libraries in CERN High Energy Physics experiments to other industries
- Axomic uses advanced data management and data mining tools to store and retrieve digital assets
- Software architecture mirrors the way users have operated manually facilitating ease of use



Examples of Digital Assets



Axomic charts the course for architects

- Digital Assets managed include:
 - Technical drawings
 - Sketches
 - Photographs
- Major markets are:
 - Architectural practices
 - Engineering Consultancies
- Additional markets include:
 - Advertising
 - Satellite imaging



Architects are a key market managing Digital Assets



Why set up a business in the UK?

- Easy to set up a business (£100 and 1 day for a Ltd. Co.)
- Low amount of “red tape”
- Technology companies encouraged
- People with skills available
- Access to English-speaking market
- Access to venture capital
- Positive attitude towards spinouts and University – business interaction
- Low taxes



Why set up a business in the UK?

- The UK is the second largest global recipient of Overseas Direct Investment (after the US)
 - 17% of all EU investment
 - 7% of the worldwide investment
 - 39% of US investment in the EU
 - 53% of Japanese investment in the EU

Source: UNCTAD World Investment Report 2002



Why set up a business in the UK?

- Britain is relatively low cost for business
 - 13.1% cheaper than the USA for a start-up over its first ten years
 - c.f. Italy 11.4%, France 7.8%, Germany +1.9%

Source: KPMG Competitive Alternatives Report 2002



Why set up a business in the UK?

- Britain is relatively low in corporation tax rates
 - 30% for large companies, 19% for small companies
 - c.f. 40% in Belgium, ~35% in Italy, France, Spain, Austria – but Germany is lower at 27%

Source: HM Inland Revenue



Why set up a business in the UK?

- Britain is relatively low in personal income tax
 - Overall tax cost from salary is 32% in UK
 - 38% in Spain
 - 41% in France
 - 43% in Italy
 - 56% in Belgium

Source: Forbes Global, May 2002



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The personal aspects

- Research versus business – what are the choices?
- Technology Director or Managing Director?
- Will you make a fortune?



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The six prerequisites

1. Is the opportunity really a spinout?
2. What's the potential for your idea? The importance of sales and marketing
3. Building a team
4. Managing your Intellectual Property
5. Write a business plan
6. Raise money for R&D and business development



1 Business Model

- Is the opportunity really a spinout?
 - **Business model** may not be a spinout company
 - Licensing may be preferable
 - Consultancy may be more appropriate
 - Venture finance will be most appropriate for substantial opportunities
 - **Look outside CERN for your customers!**



2 Sales and Marketing

- What's the potential for your idea? The importance of sales and marketing
 - Size is important! Assess the scale of the opportunity
 - Barriers to entry and technical substitutes
 - Essential to find good sales & marketing specialists



3 Team

- Building a team
 - Think of the personal issues
 - Financial supporters will help to build the team (but they look to an enthusiastic team at the start)



4 Intellectual Property

- Managing your Intellectual Property
 - Next seminar will cover this in more detail
 - Think before you publish
 - Speak with CERN TT / your university officers early in the process
 - Decide on direct versus indirect spinout (direct uses IP from research, indirect uses skilled people)



5 Business Plan

- Write a business plan
 - Needed to codify your thinking and justify funds required
 - Vision, concept and objectives for the business
 - R&D, Sales & Marketing and Operations plans
 - Financial requirements over 1, 3 and perhaps 5 years
- Plenty of help available for this step



6 Money

- Raise money for R&D and business development



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Support for your business

- PPARC
- CERN
- UK Trade & Investment
- Regional Development Agencies / Business Link



Support for your business

- Incubators
- Accelerators
- Product development houses
- Sales & Marketing bureaux



Support from PPARC

- Rainbow Seed Fund
- Business Plan Competition
- Enterprise Fellowships
- Support from UK TTC



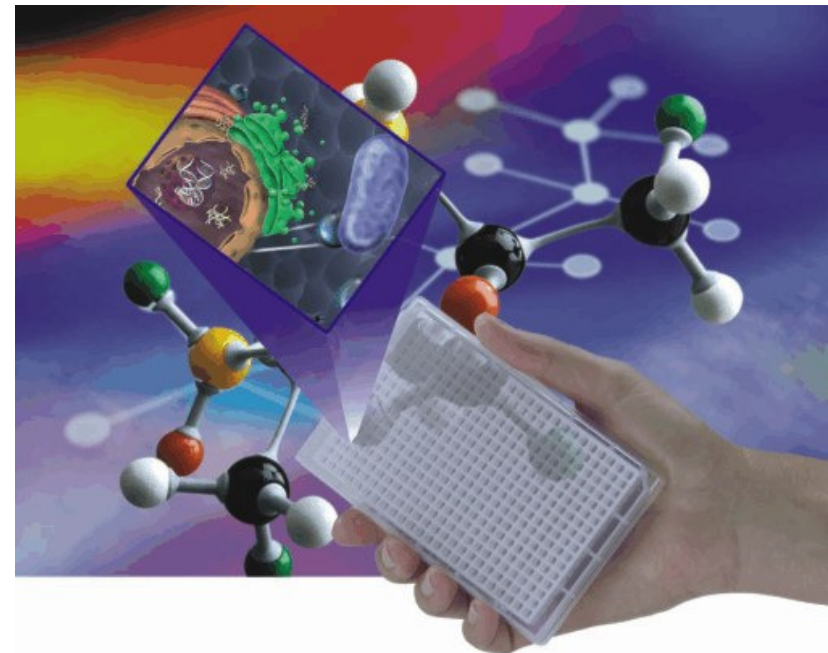
Support for your business

- PPARC www.pparc.ac.uk/In/intro.asp
- Rainbow Seed Fund www.rainbowseedfund.com
- UK Trade & Investment www.ukti.gov.uk
- Small Business Service www.businesslink.org



Particle Physics Empowers Biotechnology: deltaDOT

- deltaDOT has applied cutting edge particle physics technology to the needs of biomolecular separation resulting in dramatic improvements over conventional DNA sequencing and proteomics technologies.

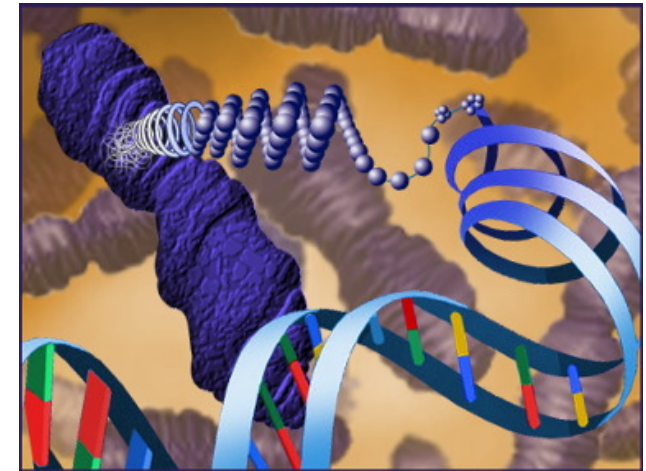


Rapid Protein Analysis
Copyright ESA Biosciences Inc

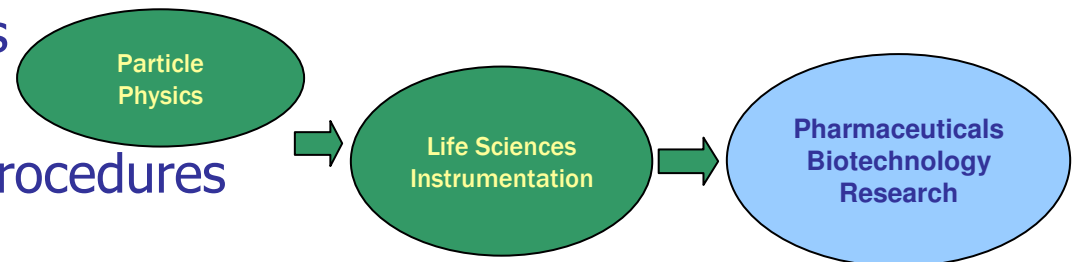


Particle Physics Empowers Biotechnology: deltaDOT

- deltaDOT harnesses cutting-edge particle physics technology and its application to the needs of biomolecular separation
- deltaDOT has combined several technologies from High Energy Physics research to achieve this including:
 - Space-time correlation analysis
 - Equiphase signal processing
 - Equiphase vertexing
 - Fast Biomolecular switches
 - ROOT-based analysis
 - Drift chamber alignment procedures
 - UV-sensitive detectors



High Speed Protein, DNA & RNA analysis
Copyright University of Massachusetts Amherst



Particle Physics Empowers Biotechnology: deltaDOT

- This approach facilitates dramatic improvements over conventional DNA sequencing and proteomics technologies:
 - Label-free detection
 - Resolution between molecules of similar molecular weight
 - Sensitivity in detecting molecules in low concentrations
 - Relative quantification of different molecules in a mixture

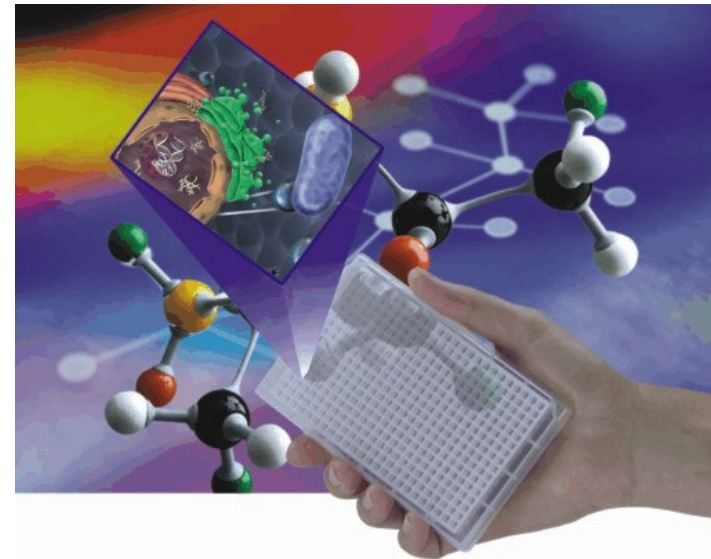


deltaDOT high performance capillary
electrophoresis system
Copyright deltaDOT Ltd



Particle Physics Empowers Biotechnology: deltaDOT

- deltaDOT technology is focused on the Life Sciences markets:
 - Pharmaceuticals
 - Biotechnology
 - Academia
- Proteomics / Genomics markets worth \$2bn per annum
- Growth up to 30% p.a.
- This Imperial College spinout has attracted finance from Venture Capital funds and Proctor & Gamble



Rapid Protein Analysis
Copyright ESA Biosciences Inc



Making Sense of Massive Data Sets: Quadstone

- Techniques used by astrophysicists to extract key information on stars and galaxies from very large data sets are now being used by large consumer facing companies (banks, airlines, telecoms and financial institutions) for extracting key details on customer behaviour from their vast databases.

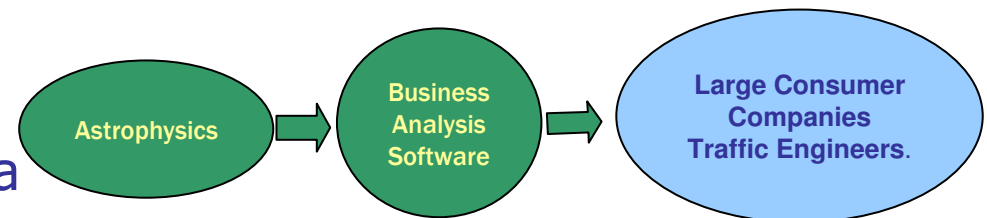


Making Sense of Massive Data Sets: Quadstone

- Astrophysicists need to extract key information on stars and galaxies from very large data sets
- Large consumer facing companies now need to extract key information from their very large databases on customer behaviour
- Quadstone software uses techniques derived from Astrophysics to do this including:
 - Exploratory fast-counting
 - Guided predictive modelling algorithms
- Visualisation of very large data volumes with interactive performance.



Large Consumer Organisations need to analyse customer behaviour



Making Sense of Massive Data Sets: Quadstone

- The company was formed as a buyout of two groups from the University of Edinburgh's Parallel Computing Centre (EPCC)
- The global market for Business Intelligence Tools is estimated to be worth \$1.3bn and growing at 10 – 15 % per annum



Thank you for listening

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