Let’s Talk How
Business Collaborators · Innovators · Partners

A Case Study: Magna Parva working with the University of Leicester

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Resolving the need

Magna Parva initially started to work with the University's Space Research Centre on a successful bid to the European Space Agency (ESA). It was a win-win collaboration:

- the University required the support of an industrial partner who could deliver the bid's hardware and offer a flexible source of highly skilled staff;
- Magna Parva needed access to a world-class scientific, technology and research resource which perfectly complemented its own capabilities and provided a stable base for the company's growth.

Working together for tangible results

The initial collaboration between Magna Parva engineers and University of Leicester scientists and engineers was the stepping-stone to an ongoing partnership which is thriving today.

A second successful joint bid to ESA resulted in a ground-breaking collaboration on the design and build of a device for use on a future mission to detect life on Mars: the company undertook the mechanical design and delivered the hardware; the University input the research and technology and provided the product assembly and testing.

Again, the skills within the company and the Space Research Centre each complemented and added value to the other. The success of the project was such that it resulted in:

- a joint Intellectual Property collaboration between the two organisations
- development of terrestrial applications for the invention, such as in medical devices
- the opportunity to spin-out the space-funded technology into wider terrestrial markets

Growing collaboration

- Today, the company and University frequently compile joint bids for research funding and contracts, and collaborate on the implementation of successful projects.
- Magna Parva offers regular work placements for students and funds practical projects for them to deliver – so that they gain valuable experience of industry; it also recruits Leicester graduates to its permanent team of staff.
- Students from the University's Department of Physics and Astronomy are involved in a Magna Parva joint-sponsored project to design, build and launch a student satellite on a future space mission.
- Exploratory discussions between the company and the University may lead to a Knowledge Transfer Partnership where the exchange of expertise and skill delivers a project with clear commercial benefits.
Magna Parva & the University of Leicester: a successful collaborative venture

Magna Parva and the University of Leicester’s Space Research Centre are collaborating on the development of a unique Life Marker Chip for detecting life on Mars. The Chip is being designed to search for the presence of biomarkers – i.e. organic compounds indicative of extinct or extant life – for use on a Mars mission in 2018.

The design will provide an ultra-fast, automatic sample processing and analysing system that will operate remotely on the surface of Mars. It has to take into account the extreme operating conditions which impose severe limits on the size and weight of the system.

The mutual collaboration is operating at the limits of existing technology and miniaturisation and demands a high level of innovation in all aspects of the design, build and construction. Already one patent filing has resulted and it is anticipated that additional protectable Intellectual Property will arise from the collaboration.

Early evaluations have indicated that the device could have very significant commercial potential way beyond its use for detecting Martian life; the following applications for the technology are currently being explored:

**Medical** – for disease detection and analysis
**Defence** – for chemical warfare detection and analysis
**Environmental** – for contaminated land analysis and geological surveying
**Agricultural** – for trace elements and chemical analysis

In addition, Magna Parva and the University are jointly developing aspects of the Life Marker Chip as part of a new venture with other University departments – such as Cardiovascular Sciences, Chemistry and Engineering – and with the Accident and Emergency Unit at Leicester Royal Infirmary. This venture will enable novel diagnostic and monitoring devices to be developed and tested in operational conditions.

The ground-breaking Life Marker Chip venture between Magna Parva and the University of Leicester started four years ago and was shortlisted for the Lord Stafford Award 2009 which recognises the development of successful collaborations between business and universities. The project has won major funding from the Science and Technology Facilities Council and the Mars mission is sponsored by the European Space Agency.

The Space Research Centre

Space research within the University of Leicester’s Department of Physics and Astronomy celebrates its 50th anniversary in 2010. Over 20 years ago, the concept of a dedicated Space Research Centre was born and, in 1998, the Centre opened.

The Centre is a world leader in Space Science Instrumentation and Earth Observation Science, its research excellence backed by a high level capability in engineering design. It has successfully pioneered the development of novel sensors and optics, X-ray astronomy, life marker experiments, gamma-ray instrumentation and thermal and fast neutron detection.

The Centre’s work is supported by test and engineering facilities, dedicated laboratories and computational systems and it has forged strong links with the wider industrial community providing expertise and consultancy to many sectors that now extend well beyond the space industry.
Magna Parva & the University of Leicester: a collaboration that delivers

The partnership between Magna Parva and the University of Leicester is built on collaboration, mutual respect and trust. Skills are complementary: the company is small, flexible and able to deliver mechanical design and hardware; the University is highly scientific providing a strong research and technological base with proven testing facilities.

For the University of Leicester, it has delivered:

- Access to a highly skilled stream of science graduates
- 7 new members of staff and an increase of £650k in turnover
- £3 million worth of collaborative projects successfully won
- Access to world-class academic research
- Leverage of University expertise across differing specialisms
- Exceptional experience which has led to winning contracts with other partners
- A broadening of the company’s skill base and product range
- A more competitive approach at a time of increased economic pressures
- Access to additional staff and skills, outside its resources, with which to win bids
- £3 million worth of collaborative projects successfully won
- An industrial partner and so competitive advantage in submitting research bids
- Enhanced ability to bid for projects outside its resource capabilities
- New research opportunities and protectable Intellectual Property to underpin further collaborative commercial ventures
- An insight into the working practices and needs of industry
- An understanding of SME needs and how to engage with small companies

The Magna Parva and University of Leicester partnership was recently shortlisted for two prestigious awards – this external validation further emphasises the success of business working closely with the University.
Enterprise and Business Development

The University of Leicester’s Enterprise and Business Development team is talking to business for mutual benefit. We have a strong record of forging successful partnerships with industry – working jointly to translate ideas into innovations and technologies that make a tangible difference to the world and have a significant impact on economic prosperity.

Sharing the benefits of our knowledge and expertise lies at the very heart of all that we do. We strive to exchange knowledge and maximise the commercial potential of our research.

We invite business to talk to our team and find out how we can work together in partnership.

Company ambassador
Andrew Bowyer
Director
Magna Parva Limited
Leicestershire
:e: andy.bowyer@magnaparva.com
:t: 01530 811305

University ambassador
Professor George Fraser
Director
Space Research Centre
University of Leicester
:e: gwf@le.ac.uk
:t: 0116 252 3542

University ambassador
Dr Lisa Stocks
Head of Business Services & Collaboration
Enterprise and Business Development
University of Leicester
:e: lisa.stocks@le.ac.uk
:t: 0116 252 5120

"The Project, Science and Business Development teams at Leicester have made building a long-term partnership with the University easy and rewarding, from which not only have exceptionally innovative technologies been developed but people too."

"Working with Magna Parva has meant sharing challenges in an open and innovative way – the ideal collaboration for both sides."

"Collaborating with Magna Parva has brought a whole new perspective on how we work with business; this will be invaluable for the future, particularly as we forge partnerships with other SMEs with whom we are very keen to work for similar mutual benefit."
Contacts details

Andrew Bowyer
Director
Magna Parva Limited
Leicestershire

e: andy.bowyer@magnaparva.com • t: 01530 811305

Professor George Fraser
Director
Space Research Centre
University of Leicester

e: gwf@le.ac.uk • t: 0116 252 3542

Dr Lisa Stocks
Head of Business Services and Collaboration
Enterprise and Business Development
University of Leicester

e: lisa.stocks@le.ac.uk • t: 0116 252 5120
w: www.le.ac.uk/business