

CASE STUDY:

OIL AND GAS MULTINATIONAL



Industry-University Research Alignment Facilitated by Roadmapping

An international organisation operating in the oil and gas sector was sponsoring the development of a new technology at the University of Cambridge which had significant commercial application in its sector and beyond. Taking the technology to the next stage required a clearer understanding of its likely commercial path, and an understanding of the risks and decision points required for development and implementation.

Early academic research had shown good potential for the production of a new gravitational sensor that could be both more sensitive and more accurate. Proof of concept prototypes were likely to be available in the near future. However, field testing in oil and gas is extremely expensive, so an economic and practical plan would be required before committing to this stage.

Expectations of the performance and availability of products utilising the new technology were mismatched between the organisation and the academic research team, and a process was needed to develop an agreed plan of the next stages of development, the associated resources required and the risks involved. Forming a spin out company, creating a joint venture or contract research were among possible routes to the production of commercial products.

Roadmapping process

A one-day workshop was organised at IfM, facilitated by Dr Nicky Athanassopoulou, Senior Industrial Fellow at IfM Education and Consultancy Services (IfM ECS). This involved a team from the client, the lead of the academic research group and also Cambridge Enterprise, the Technology Transfer office of the University of Cambridge. This session had the objective of reviewing the development plan for the technology, along with any enhancements that could be realised from related technologies such as telemetry systems and data integration over the medium term. The workshop reviewed the resource requirements and the associated risks of developing the technology further. Crucially, it also clarified and explored the different commercialisation options that presented themselves to the client. Use of IfM's roadmapping methodology included asking the client delegates to populate parts of a template roadmap in advance

of the meeting. This ensured that a fast start could be made, making efficient use of executive time, as well as enabling delegates to see quickly how the process would deliver useful results.

Results

Outputs from the workshop included a clarified and agreed view of the technology development stages, resource requirement, risk profiles and a top-level action plan. The development and commercialisation routes for the technology were elaborated and clarified. Development routes such as a joint venture or formation of a spin out company were discussed in depth.

A list of important enablers was identified; these were factors ranging from agreement on intellectual property to availability of the key company operating plant that would need to be in place for the technology to be developed to commercial readiness.

IfM ECS

IfM Education and Consultancy Services works with companies of all sizes to help create and capture value, and with national and regional governments to support and grow their industrial sectors.

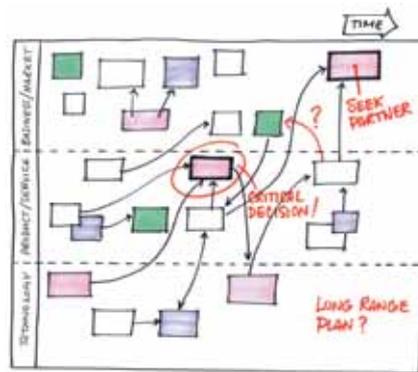
It does this by transferring the new ideas and approaches developed by researchers at the Institute for Manufacturing (IfM) through a programme of education and consultancy services.

IfM ECS is owned by the University of Cambridge. Its profits are gifted to the University to fund future research activities. For more details on its work visit: www.ifm.eng.cam.ac.uk/services

Equally important was the list of risks that the group identified using a voting process. From a total of 22 potential risks, a short list was identified as key. These included poor performance of the technology, loss of key skills from the organisation and factors related to the commercial demand for the products.

The organisation identified summary resource requirements, with a plan agreed to produce a more detailed analysis of required skills sets and level of resourcing, through hiring or sub-contracting, for consideration by the business.

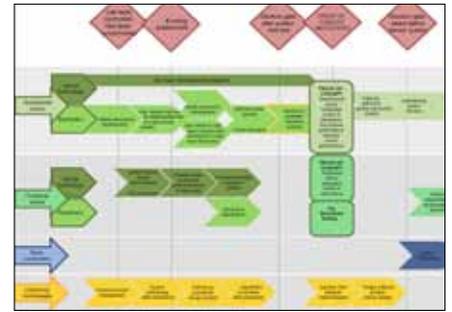
The most important outcome was agreement on the right vehicle for continued development, with spin out options being eliminated in the short term.



Roadmapping at IfM

IfM ECS is a world centre of excellence for roadmapping. It has been researching the application of roadmapping for more than a decade and its techniques have helped more than 250 public and private sector organisations with their strategic and technology innovation planning.

Roadmapping is a powerful technique for planning an organisation's technological capabilities to ensure they meet its commercial or strategic goals.



The graphical nature of roadmaps supports strategic alignment and dialogue between functions in the firm and between organisations.

“Roadmapping provides a valuable framework; it doesn’t prescribe what to do. Getting the right people involved is vital. 80-90% of the knowledge required is already available, but the roadmapping process is required to organise this knowledge and to share it so that collaborative wisdom can be applied.”

Nicky Athanassopoulou

➤ For more on **Roadmapping**, visit: www.ifm.eng.cam.ac.uk/roadmapping

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