News at 42 Technology

42 Technology’s new team to be led by ex-Sagentia consultant

Dr John Wilkes joins as a senior consultant to build our new in-house resource for projects requiring advanced electronics and embedded software and to further boost our profile in innovative electronics, instrumentation and mechatronic products. John has over 18 years product development experience in major markets including consumer audio, safety-critical avionics, fuel-cell technology, biological instrumentation and medical devices.

More fresh blood

Another new recruit, Jon Spratley, joined us from the University of Birmingham where he is completing his PhD on a micro-sensor for implantation into the human motor cortex. John hails from Bristol and has had several industrial placements in the automotive industry throughout his degree time at Birmingham where he also gained a 1st in Mechanical Engineering. He is somewhat of a Taekwondo ace, so we don’t argue with him!

Business development thrust with new Associates

Two new high profile Associates are helping us develop new business leads and direction.

Richard Archer, founder and former CEO of The Automation Partnership (TAP), will be instrumental in helping build our profile in the life sciences market. He has helped many of the world’s top pharmaceutical companies to achieve new levels of operating efficiency by automating their R&D and manufacturing processes, and he pioneered an industrialised ‘drug discovery factory’ approach in the search for potential new medicines.

In addition to his new role at 42T, Richard is involved in advising a number of medical technology and related companies including: executive chairman of Avordia; chairman of tissue engineering company MagneCell, and a non-executive director at Gentronix. He is also a Senior Industrial Fellow at the Institute of Manufacturing, Cambridge University and on the board of Loughborough University’s Innovative Manufacturing Research Centre.

Adrian Swinburne will further strengthen our senior-level team and new business prospecting activities. Adrian, who was Chief Executive at Sagentia UK. (Scientific Generics) from August 1999 to February 2007, is helping us to identify and develop major new leads and partnership opportunities in consumer, industrial and utilities markets. Before his eight year career at Sagentia, Adrian held senior-level engineering management positions with international companies including MDSI, Watkins-Johnson and Racal (now Thales).

Dose counter GRaD progress

We recently successfully completed work, funded by a GRaD award, on further detailed developments of our novel, low part count, dose counter for inhalers. Improvements have been made to aid manufacturing and models manufactured for assessment. Discussions are on-going with several parties regarding commercial exploitation.

Howard’s Q5

Extracts from a recent business interview with Howard gives some insight into 42T

Are there any new technologies or industry sectors you plan to move into?

Healthcare and biotech; clean technology, particularly more energy-efficient heating and cooling; and drink dispensing are already important sectors for us so we plan to expand our profile and sales in those areas.

How do you plan to grow the company?

Organically – with quality people and a healthy mix of large and early-stage, venture-backed clients. We had a great year in 2007 and are looking to further grow this year by bringing in more project managers, engineers, designers and physicists.

As you would expect, finding sufficient top quality people is a perennial challenge for any company that’s growing. However, that said, we’ve created and filled five new appointments in the first quarter of 2008.

What do you see as 42T’s biggest achievements?

When I joined 42T in 2002 there were three things that really impressed me and that’s still true today: The size and maturity of our client relationships; the number of products in manufacture; and the calibre of the team.

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News 42 is published by:
42 Technology Ltd, Meadow Lane, St. Ives, Cambridge, PE27 4LG United Kingdom
Tel: +44 (0)1480 302700 Fax: +44 (0)1480 302701
Email: answers@42technology.com

42T insulated from competition from Asia?

We’ve seen very little threat in our core areas of applied physics, mechanical engineering, electronics and industrial design. Lots of our clients certainly get parts manufactured in Asia but they tend not to go there for design services, because a lot of our activity, whether it is technology strategy or down at the detailed design level, requires deep understanding of markets or extensive face to face contact.

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42 Technology Ltd, Meadow Lane, St. Ives, Cambridge, PE27 4LG United Kingdom
Tel: +44 (0)1480 302700 Fax: +44 (0)1480 302701
Email: answers@42technology.com

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Deep Thought: . . by Dave Wilson

Specialist sensors, new instruments and calling in the consultants

Projects involving sensor technology or developing new instrumentation make up a large chunk of work at 42 Technology and we work on challenging projects across many different sectors.

The market has evolved over the last couple of decades with a move towards increasingly sophisticated, highly featured products. This article gives an insight into the benefits of using a consultancy.

Big budgets for blue-sky

In the 80s the UK MoD invested significant budgets and frequently commissioned contract R&D companies to provide technology demonstrators or to solve a specific current problem. The technology demonstrators did not necessarily have a specific end point at the outset but they created platforms for further study, as well as pump priming technology developments that would otherwise have been too risky for commercial organisations to contemplate.

For example, development of leading edge micro-machined silicon devices - sponsored over several years ostensibly to develop guidance and other control sensors - resulted in huge advances in core production and product technologies. National and international bodies have subsequently taken up the mantle to stimulate fundamental research and improve national competitiveness, but much of the present capability extends far beyond the initial project. The stage gate process, many companies still wrestle with the challenge of whether to call in external help or to go it alone. However, as part of their planning cycle, many companies still wrestle with the challenge of whether to call in external help or to go it alone.

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Big budgets for blue-sky projects were often transparent to the user. Although the core sensing technology was new, the added features and benefits were not.

For example, healthcare companies with cutting-edge technologies for improved monitoring in the home – like the Persona fertility device or blood glucose meters. Hilti is an interesting industrial example; they devised a number of reinforcing bar detectors and other instruments to complement their core construction tool business.

Specialist instruments for high value applications

Some commercial developments are aimed at high-value instruments. A US manufacturer making pumps for natural and propane gas, needed to understand the behaviour of the main thrust bearing that was ‘lubricated’ by the (very cold) liquid gas. An instrument was developed to monitor the mechanical behaviour under real operating conditions in a large, challenging and commercially essential project. Bearing failure wasn’t an option; they operate in highly dangerous explosive conditions in very expensive installations. The test alone, carried out in atrocious rain after a six month drought in California, was costly as huge quantities of gas had to be burned to waste.

Sensor based products and instruments for new markets

Many consumer and industrial product companies whose core skills are not in sensors and instrumentation use consultancies to develop sensor based products to complement their core technologies. Many such products can be found in our homes and cars with embedded sensors providing a specific functionality, although the core sensing technology is often transparent to the user.

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Calling the consultants

Technology consultancies are a rich resource to tap into for help with sensor-based and instrumentation projects. They work on a vast array of different products and their industrial experience, problem-solving skills and ability to cross-fertilise technologies can be invaluable in helping to fast track developments.

Companies may not necessarily have the in-house product development expertise and experience. Yet these products are so critical for future market success that the business case for partnering with an external resource is clear-cut. The company gets immediate access to new skills for a fresh insight on product functionality or appearance, or can bring in experienced engineers for help with cost reduction, development of a new technology platform or to boost innovation. In many cases the investment is easily offset against large product sales or a high capital value project that delivers a rapid payback.

First build the business case then manage the interfaces

To ensure a successful product development, companies need research, development and detailed designs are all essential in producing robust, effective solutions. Obviously ALL projects whether they involve external help or not need to be justified; either commercially with a thorough business case, or technically as research to provide future technology platforms or development options. Similarly ALL projects must be managed through a stage gate process where risks and deliverables are monitored.

With increasingly fast moving, globalised markets it would be hard to imagine anyone in current times investigating precious NPD resources, without firstly conducting an in-depth review of the technology options and developing detailed plans with defined decision and exit points.

But can companies already acknowledged as specialists in the sensor or instrumentation field also benefit from external help? The answer lies really in what help is required and where the consultancy adds value. An industrial instrument company, experts in their particular sensing technology, brought in 42 Technology specifically to redeploy the design for low cost manufacturing and add new data logging and GPS functionality by incorporating a new processor platform. We were also used to develop a new production process to cut costs and improve performance for another industrial instrumentation company.

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With increasingly fast moving, globalised markets it would be hard to imagine anyone in current times investigating precious NPD resources, without firstly conducting an in-depth review of the technology options and developing detailed plans with defined decision and exit points.

However, as part of their planning cycle, many companies still wrestle with the challenge of whether to call in external help or to go it alone.

The decision to work with a consultancy will always depend on many factors, including the blend of personalities. The stage gate process needs to be carefully managed from both sides to avoid unclear specifications or specification creep which influences timescales, risks and costs. But with strong communication channels and relationships based on trust, the business benefit frequently extends far beyond the initial project making a long-term commercial contribution to a company’s technology strategy and approach for creating market-winning products and processes.
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Business development thrust with new Associates

Two new high profile Associates are helping us to access a network of experienced and able core team, rather than relying just on what’s available in-house. We bring together the best people from August 1999 to February 2007, is helping us to identify and develop major new leads and partnership opportunities in consumer, industrial and utilities markets. Before his eight year career at Sagentia, Adrian held senior-level engineering management positions with international companies including MDSI, Watkins-Johnson and Racal (now Thales).

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