

BRISBANE **ECONOMIC** SERIES





Welcome to the December 2013 Brisbane Economic Series, Brisbane Marketing's

quarterly publication bringing you all the latest investment news and analysis about our city's economy.

This edition explores Brisbane's research and development (R&D) sector as a driver of innovation and growth in the local economy. Home to a string of world-class R&D facilities. Brisbane continues to build its reputation as a centre of excellence in commercialising home-grown research.

One of the most celebrated local examples of this "Invention to Invoice" phenomenon is cervical cancer vaccine Gardasil, pioneered by Professor Ian Frazer in Brishane

There is also a review of the Brisbane Innovation Scorecard, along with a profile of Flavour Creations - world leader in the design and manufacture of innovative food and drink products - as it embarks on an ambitious international expansion plan.

If you are interested in connecting with Brisbane's investment opportunities, please contact Brisbane Marketing's Investment Attraction team at investbrisbane.com.au.

Finally, I would like to wish you a safe and enjoyable Christmas and New Year, and I look forward to working with you in 2014.

Lord Mayor Graham Quirk



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With more than 79 million doses distributed, life-saving cervical cancer vaccine Gardasil is one of the most successful pharmaceutical products ever developed in Australia.



Professor Ian Frazer AC

Pioneered in Brisbane by Professor Ian Frazer, Gardasil was patented in 1991 by UniQuest, the University of Queensland's main commercialisation company. The vaccine, available in more than 120 countries, regularly generates over \$1 billion in peak annual sales and has been calculated to potentially save the lives of 250,000 people every year.

Gardasil epitomises the "invention to invoice" phenomenon, which is turbo-charging Brisbane's knowledgebased industries, as local researchers commercialise intellectual property and forge industry partnerships to bring new products to market.

Invention to invoice

Brent Watts operations manager and second-in-charge at QUT bluebox, the commercialisation company of Queensland University of Technology, said getting an innovation to market was often a lengthy and complicated process

"Once you've established there's a market, you need to plan for the resources and partners required to translate the innovation into a minimum viable product, process or service and to enter the market,"

"The innovation may need some level of protection, and one of our roles is to identify any intellectual property

and develop an appropriate protection strategy. This might include filing a patent application or maintaining the innovation as a trade secret.

"Once we've implemented a protection strategy and further developed the innovation, we generally seek to license the intellectual property to an established company if possible. They've already got a brand, distribution channels and they might have products, processes or services that complement and align well with the new

"But where that doesn't make sense because the innovation is in an emerging field, or if we can otherwise add more value in going direct to market, that's when we might consider a start-up opportunity.

Mr Watts said bluebox could also facilitate access to venture capital, angel investors and others with the appetite to invest. "At bluebox we also help with developing commercial strategies as well navigating the legal process of transferring the intellectual property to licensees," he said.

Higher education

Brisbane's world-class universities and higher education institutions supply the stream of talent needed for large-scale commercialisation and manufacturing operations in the city, according to Tertia Dex, who as director of business development at the Brisbane base of Dutch-based global life sciences company DSM Biologics, oversees a sophisticated pharmaceuticals manufacturing operation.

"A lot of our staff come straight from local universities," she said. "They've achieved a lot in research and the academic setting and want to expand their experience to

"We're in contact with all of the local universities and some TAFEs, who work with us to ensure their students are suitably qualified to come into an industry placement."

Census figures reveal the number of people in Brisbane with higher education qualifications is on the rise, with 327,000 holding a bachelor degree or higher in 2011 - an increase of about 150,000 on a decade ago. The number of people in Brisbane with a masters degree or doctorate has more than doubled in the past decade, with 63,000 people holding a postgraduate degree in 2011.

Life sciences

Ms Dex said Brisbane had a growing reputation as a centre of excellence in biopharmaceuticals and the life sciences. She said DSM and its 50 staff covered the whole spectrum of pharmaceuticals and biopharmaceuticals production, collaborating with industry partners to manufacture commercial drugs to treat a range of diseases including cancers, and inflammatory diseases such as rheumatoid arthritis and heart disease.

"Traditionally in Australia, we've been very good at research and discovery but what happened until quite recently was most of the intellectual property generated locally was partnered out and licensed overseas,"

"But now we can manufacture up to 500kg of drugs a year at DSM, which is a major commercial quantity - and we aim to double this capacity through future expansion of our facility.

"This is the start of something really important for the whole of the Australian industry. It's very exciting."

Commercialisation is also a growing focus for The University of Queensland, with UniQuest-licensed innovations generating annual sales of \$3 billion. Dr Craig Belcher, UniQuest's senior director of industry engagement, said the organisation benchmarked in the top 10 per cent globally for university-based technology transfer.

"Our role is to progress research along the value chain," he said. "We identify projects with market potential and we work that up into an opportunity that is commercial-ready.

"The big companies like coming to Australia, they like the innovation and Queensland has a lot of world-leading innovation."

Dr Craig Belcher, UniQuest, Senior Director of Industry Engagement





Dr Craig Belcher

"We also specialise in expertise commercialisation. That's when companies come to us with what may be a commercial problem in its assembly line or an unexpected material defect in a product, and are seeking an expert from UQ with the capability to help in that area

"If we have an expert who can address the problem, we match them up, deliver the work and we invoice. So we're directly applying research expertise in the university to help solve a real commercial problem."

Dr Belcher cited UQ technology licensed to major multinational companies as prime examples. "We've developed an image correction, licensed to both GE and Siemens, and now that technology is in two-thirds of the world's MRI machines," he said. "The big companies like coming to Australia. They like the innovation, and Queensland has a lot of world-leading

"We have that commercialisation mentality at UQ and we're setting about to engage with industry, to ensure that our UQ research leads to new products and services

"We want our research excellence to make a profound benefit for people locally, nationally and internationally. It's what we like to call 'excellence-plus' at UQ and it is about creating impact through the commercial translation of research."

UQ Centre for Clinical Genomics

The University of Queensland Diamantina Institute (UQDI) is home to the UQ Centre for Clinical Genomics, the most sophisticated and largest human genomic facility in the Southern Hemisphere. Here, cutting-edge technology is used to investigate the dynamic interplay between genetic and environmental factors in the development of traits and disease

Located at Brisbane's Translational Research Institute (TRI), UQDI is pioneering a range of research programs that are breaking new ground in their prospective research fields. These include:

- Professor Matt Brown's gene-mapping studies that have greatly increased our understanding of the root causes of debilitating conditions such as ankylosing spondylitis, schizophrenia and rheumatoid arthritis.
- Professor Ranjeny Thomas's novel vaccine technology for the treatment of rheumatoid arthritis.
- Dr Fiona Simpson's work on a revolutionary approach to treating a type of skin cancer called squamous cell carcinoma.

Expat talent

Brisbane's acknowledged strengths in commercialisation provide another advantage for the city's innovation culture: the return of highly qualified expats to the city.

"Our facility has been a magnet for biotechnology and pharmaceuticals experts and Australian expats who were working overseas," Ms Dex said. "A lot of us have come back to Brisbane for this specific opportunity."

UniQuest has ramped up its commitment to innovation through its own skills program, Dr Belcher said. The program runs across all faculties at UQ, with the aim of promoting commercialisation opportunities.

"We run commercialisation workshops for UQ researchers, staff and students -3000 have been through the course," Dr Belcher said. "AtUniQuest, we're looking for people with both strong research skills and exceptional industry contacts."

"This is the start of something really important for the whole of the Australian industry. It's very exciting."

Tertia Dex, DSM Biologics, Director of Business Development

Industry partnerships

Since 2000, more than \$450 million has been raised by UniQuest start-up companies to take UQ technologies to the market. Dr Belcher said one of the keys to successful commercialisation was a clear unmet need in the marketplace and a supporting product development plan.

"This is true whether we are seeking to raise venture capital for a new start-up company for the UQ innovation or enter into a research partnership with large existing companies,' he said.

"Recent examples include Nexgen Plants Ptv Limited. a UniQuest start-up company, established with a founding investment of \$2 million from venture capital. The money is to be used to further develop its plant virus resistance technology. Another example is a research partnership with Janssen Biotech Inc - the pharmaceutical subsidiary of Johnson & Johnson - to develop a UQ technology as a potential autoimmune rheumatoid arthritis treatment

"If we can partner with a company that already has a path to market, that already has the customer knowledge required for success then that's a much lower risk for us. It's all about embracing open innovation and gearing up towards realising a market opportunity that our partner has already seen."

To discuss investment opportunities in Brisbane, contact:

Steven Silvester

T: +61 7 3006 6266 ssilvester @brisbanemarketing.com.au



Brisbane's Sustainable Minerals Institute is a world leader in delivering knowledge-based solutions to the minerals industry.

In little over a decade, The University of Queensland's Sustainable Minerals Institute (SMI) has collaborated on

"We have the

world's most

researchers -

of expertise is

our breadth

unique."

diverse group of

resource industry

more than 1700 projects with industry partners, including five of the world's largest mining companies.

The projects include game-changing ventures critical to the future sustainability of the resources industry, not just locally but also internationally.

They include the12Mine (Innovative Technologies and

Concepts for the Intelligent Deep Mine of the Future) project, funded by the European Commission. The project marks the start of a series of activities designed to realise the concept of an invisible, zero-impact mine. It also focuses on the development of technologies suitable for future deepmining activities.

Professor Margaretha Scott, director of SMI's WH Bryan Mining and Geology Research Centre, said the institute's 400 staff and 100 postgraduate students worked on "life-of-a-mine" projects ranging from mineral discovery, mine design, construction and production to mine site closure and rehabilitation.

Its corporate partners include Anglo American, Newcrest Mining Limited, Rio Tinto, Codelco Chile, Teck, BMA, BHP

Billiton, Glencore Xstrata, Newmont, DeBeers, AMIRA, Qld Government. ACARP and the World Bank.

> "SMI has a broad talent base including engineers, scientists and economists, and within each of these disciplines there is a range of specialist skills," Professor Scott said. "This includes geologists, computational scientists drawn from mathematics and physics, anthropologists, and social scientists.

"Similarly, in engineering there is a range including those with particular mining. geotechnical, rock-breakage science, general mining blasting expertise and computational geoscience."

SMI was formally established in 2001 under the leadership of Professor Don McKee, drawing together The University of Queensland's mining. mineral processing, mine rehabilitation and OH&S research capabilities. Since then it has grown to include social responsibility, water management, and eneray.

"We have the world's most diverse group of resource industry researchers our breadth of expertise is unique," Professor Scott said. "Sustainability challenges require a range of skillsets that can be applied as part of an integrated approach, and the SMI has that capability and that focus.

"We operate globally with partners on six continents. This keeps us at the forefront of advances made

elsewhere in the world and has allowed us to be very effective in developing international multicentre linkages."

Professor Scott said SMI had a track record of improving government practice and policies through development of industry best-practice guides used around the world. This led to a \$31 million AusAID grant in 2011 to co-establish, in partnership with the University of Western Australia, the International Mining for Development Centre, which has trained over 800 mining industry stakeholders from more than 30 countries.

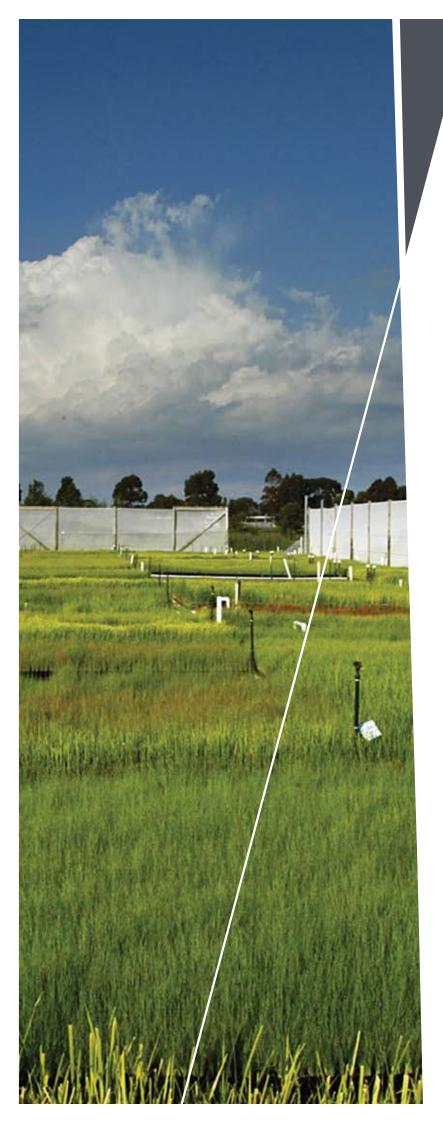
SMI has also developed a framework to reduce freshwater consumption on mine sites by up to 75 per cent and increased viability of low-grade material by up to 20 per cent.

Professor Scott said the long-term outlook for the local resources sector remained bright.

"The resource sector has over the years experienced peaks and troughs and without a doubt the mining and resources sector will continue to be a major source of wealth, knowledge and employment for Brisbane," she said.

To connect with opportunities in Brisbane's energy and resources sector, contact Corrie Germin, Brisbane Marketing's senior manager, investment attraction (commercial), on +61 7 3006 6212 or at cgermin@brisbanemarketing or visit investbrisbane.com.au

For more information on the Sustainable Minerals Institute, visit smi.uq.edu.au



CardnoKnows innovation

As a leading provider of infrastructure services, Cardno helps create better and more sustainable futures for communities in which we live and work.

One way in which we are achieving this is through the use of innovative solutions such as the BiofiltaTM system which provides sustainable outcomes for the harvest, storage and cleansing of stormwater. Cardno recognises the need to combine our design expertise with on-ground outcomes and to address the global challenge of achieving water sustainability in light of population growth and climate change.

As a result of this expertise, Cardno was recently awarded the design contract for the Townsville Recreational Boating Park, one of the largest of its kind in Queensland. The project will utilise the BiofiltaTM system where the spatial efficiency is up to six times less footprint area than a traditional bio retention basin and incorporates innovative planter design to combat climate change and sea level rise. The project has been approved by Authorities including the Great Barrier Reef Marine Park Authority and Federal Government Environment Assessment Team for for use in the protection of sensitive marine environments.

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RESEARCH CENTRE

Research and Development by Numbers - The Rise of Australia's New World City

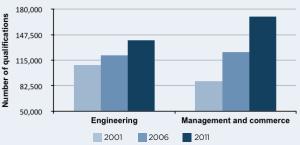
Education



(Source: ABS, Census of Population and Housing, 2011, Basic Community Profile - B40.)

STRONG GROWTH IN MANAGEMENT/COMMERCE AND ENGINEERING DEGREES

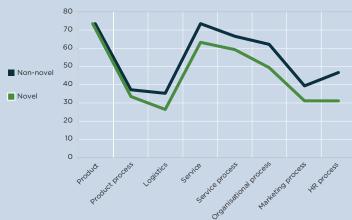
(GREATER BRISBANE)



(Source: ABS, Census of Population and Housing, 2011, Time Series Profile T31.)

Innovation

INNOVATION TYPES ACROSS INDUSTRY SECTORS (BRISBANE LGA)



(Source: Brisbane Innovation Scorecard 2013)

8 | RESEARCH CENTRE

NUMBER OF PEOPLE WITH POSTGRADUATE DEGREE (GREATER BRISBANE)

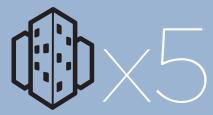
63,226 2011

40,449 2006

25,262 2001

(Source: ABS, Census of Population and Housing, 2011, Time Series Profile T30.)

CRCs Headquartered in Brisbane



In 2012-13 there were 5 Cooperative Research Centres (CRCs) headquartered in Brisbane, the second-most of any Australian city. These centres collectively will receive close to \$110m in CRC grant funding in total.

(Source: 2013/14 CRC Directory)

R&D Expenditure

(QUEENSLAND)



In Queensland in 2011-12, total government and business R&D expenditure totalled \$3 billion, representing growth of 40% over the past five years (nominal).

(Source: ABS Cat no 8104.0 - Research and Experimental Development, Businesses, Australia, 2011-12, ABS Cat no 8109.0 - Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2011-12.)



Innovation will be the key to delivering the productivity gains needed to sustain ongoing growth in Brisbane's energy and resources sector.

That was the clear message from the inaugural Brisbane Energy and **Resources Innovation Connection held** this month at Queensland University of Technology's (QUT) Science and Engineering Centre at Gardens Point.

The event, jointly hosted by Brisbane Marketing with the support of QUT Business School, brought together energy and resources industry figures to discuss the challenges of innovation integration in the supply chain, while developing Brisbane as a Global Resources Hub.

Adrian Smith, head of technology at Brisbane-based software company Ennova. works closely with a range of leading construction and engineering companies active in the energy and resources sector.

Mr Smith told the audience Ennova was developing innovative software products designed to tackle the productivity challenges faced by many resource construction projects.

"In the last 50 years, labour productivity in construction has been in a gradual decline compared to manufacturing, which in the same period has increased by around 200 per cent." he said.

"We had a hypothesis that we could improve the productivity of resources construction projects through cloud technology and mobile computing.

"So we've developed a browser application hosted in the cloud, delivered through an iPad and iPhone app, into construction

projects in an industry which has been struggling to keep pace with innovations in the manufacturing sector."

GE's director of ecomagination in Australia/NZ, Ben Waters, said innovation and sustainability could co-exist on major resources projects.

"You shouldn't have to choose between the economy and the environment, it's a false choice - you've got to be able to have both of those," Mr Waters said.

"Companies that can change through innovation can tackle the big environmental challenges, but it doesn't happen by accident. You need a corporate strategy and you can't do it alone, you need to collaborate and we do that with big players like the CSIRO and smaller players such as start-ups '

Associate Professor Rob Perrons, of QUT Business School, told the audience that technology and innovation would matter more in the future than they had in the past.

"The resources we're chasing are more challenging to get to and, on top of that, we've got an ever-increasing list of environmental issues that we have to manage," he said. "All of these problems are going to require much innovation and R&D."

Associate Professor Perrons said the challenges facing the resources sector were so big in scope and scale that it was unlikely any single organisation would be able to tackle them on its own.

"Tackling these challenges is going to

EVENT DETAILS

Brisbane Energy & Resources Innovation Connection

Date: Tuesday 10 December 2013 Speakers:

Ben Waters, Director of GE's ecomagination program in Australia

Associate Professor Rob Perrons. **QUT Business School**

Dr Jeremy Davies, Director Natural Resources Centre of Excellence, Computer Services Corporation

Adrian Smith. Head of Technology at Ennova

Darren Thornton, Director at Blast Movement Technologies

Venue: The Atrium, Level 6, Science & Engineering Centre (P block), QUT Gardens Point

require a lot of collaboration between industry stakeholders," he said. "This discussion isn't just about technology anymore. We need to articulate the value of technology to other stakeholders in our ecosystem. New workplace cultures will matter a great deal to the success or failure of the technologies that are emerging in the resources sector."

The audience also heard from Dr Jeremy Davies (director Natural Resources Centre of Excellence, Computer Services Corporation) and Darren Thornton (director at Blast Movement Technologies) on the importance of innovation in the energy and resources sector.

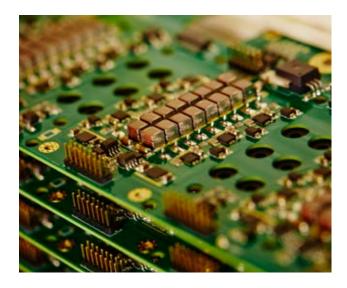












If pioneering Brisbane electric vehicle and components company Tritium is right, drivers of the world could be behind the wheel of fully electrical vehicles in just three or four years.

Tritium has been turning heads on a global scale for its commercialisation of electronic vehicle technology, developing a product portfolio of world-leading technology that has been used in numerous solar car, electric vehicle and renewable-energy projects.

Its electric vehicle (EV) powertrain solutions include high-performance motor controller and battery management products for electric vehicles.

Winner of the 2013 Lord Mayor's Business Awards in the innovation category, the company has also expanded its technology portfolio across a much broader range of markets and has applied its specialised expertise in a number of exciting projects.

These include accompanying Oscar-winning movie director James Cameron (Titanic, Avatar) on an expedition to the deepest part of the world's ocean, working on the Deep Sea Challenger electric submarine.

Tritium co-founder and operations manager Dr Paul Sernia said innovation was at the forefront of all Tritium's

"Everything we do is new, or an adoption of new technology and ideas," he said. "The company has built a strong portfolio of novel and industry-leading products that showcase our strength in creative thinking and cuttingedge engineering.

"I would say innovation comes from management down, but all staff come up with innovations that ensure we produce high-quality power electronic components for electric vehicle systems.'

The team at Tritium thinks in terms of sustainability and renewable energy at every

"Essentially we create solutions that will work to replace vehicles as we know them today in the short-term future." Dr Sernia said.

"Electric cars will be on the road being driven around like any other vehicle within the next few years. It's a very exciting and progressive industry to be involved in."

To find out more visit tritium.com.au



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BRISBANE INNOVATION SCORECARD 2013

More than 330 Brisbane firms were surveyed to uncover how local businesses approach innovation



TO DIFFERENTIATE PRODUCTS AND SERVICES FROM COMPETITORS (91%) TO INCREASE RESPONSIVENESS TO CUSTOMER NEEDS (89%) TO INCREASE OR MAINTAIN MARKET SHARE (88%) TO IMPROVE QUALITY OF GOODS AND SERVICES (87%) 04 TO ESTABLISH NEW MARKETS (87%) 05 ource: Brisbane Innovation Scorecard 2013

R&D TAX INCENTIVE PROGRAM: Is your company aware of the potential benefits?

Companies investing in projects or undertaking activities in Australia may be eligible for the Federal Government's Research & Development (R&D) Tax Incentive program.



The program is a self-assessment "entitlement"-based program. That is, if you have incurred

expenditure on eligible activities, then you are entitled to the benefits. Benefits are accessed through the income tax system. While the program is specifically targeted towards small and medium-sized companies, it is also open to subsidiaries or local branches of larger corporate groups.

With no cap on the expenditure that can be claimed, the program entitles companies with an aggregated turnover below \$20 million that are investing in R&D the opportunity to claim a 15 per cent tax incentive in addition to being able to cash out the 30 per cent tax losses that would otherwise be carried forward. This effectively results in the ability to receive back in cash up to \$450,000 for every \$1 million spent. In some circumstances, this can be just the type of support needed to get the company through to the next stage of development. This is particularly relevant for companies that operate in industries with high start-up costs, typical of those found in Queensland, such as companies in the biotechnology and natural resource industries. How this benefit can be delivered is provided in the simplified examples below:

Larger companies with an aggregated turnover over \$20 million can also access tax benefits under the program, but they are not entitled to the cash refunds. However, they are still entitled to a 10 per cent tax saving for every dollar spent on eligible R&D activities.

The R&D Tax Incentive program is not only generous but broad in its application, covering activities beyond the scope of what many consider to be "R&D". Any time vou undertake experimental activities to extend knowledge or the application of knowledge, R&D incentives may apply.

"Increasingly, innovation is critical to the survival of any company."

Increasingly, innovation is critical to the survival of any company. What companies must remember is that innovation is not always in product development, it can also be in process improvement. In a higher-cost economy, continuous productivity improvements are vital. Not all improvements will have the necessary elements to qualify for R&D benefits, but many will. It is worth seeking professional advice to ensure your company maximises its entitlements.

As a guide, below are some indicators to help assess whether activities undertaken may qualify for the program:

- Developing solutions to a problem of a technical nature.
- Trying to improve the operational efficiency/throughput or recovery of an existing process.
- Purchasing or building a leading-edge technology
- Trialling or testing something where the outcome is uncertain, including using existing technology in a new
- Developing any new intellectual property or technical knowledge for vour industry.
- Receiving awards for innovation or technical achievements in the industry.
- Involving a research organisation such as a university in the project.

Eligible entities must register their R&D activities with AusIndustry (the regulatory body administering the schemes) each year within 10 months of the end of the company's year of income.

The R&D Tax Incentive is one of the key areas of financial support that offers companies in the development phase of their projects some annual financial relief.

Resource company Biotech company New resource Development of a new R&D Project extraction process medical device R&D Spend \$3,000,000 \$3,000,000 Turnover \$0 Taxable Income -\$4,500,000 -\$1,000,000 Adjusted taxable income -\$1.500.000 \$2.000.000 (add back of R&D) Tax payable \$600.000 **R&D Tax Offset** \$1,350,000 \$1,350,000 Refundable amount \$1,350,000 \$750,000

For more details about tapping into Queensland's innovation or investment market, please contact Brisbane Marketing's **Director of Investment Attraction** Steven Silvester on +61 7 3006 6239 or at ssilvester@ brisbanemarketing.com.au

For more information about the R&D Tax Incentive program and how it may be applicable to your company, contact Nicola Purser on +61 7 3237 5648 or nicola.purser@bdo.com.au

R&D POWERS GROWTH AT FLAVOUR CREATIONS Brisbane food manufacturer Flavour Creations is achieving annual growth rates most companies can only dream about.



Bernadette Eriksen



The privately-owned company, a world leader in the design and manufacture of food and drink thickeners, is experiencing a minimum of 20 per cent year-on-year growth.

Founder Bernadette Eriksen, who established the privately-owned company in 1997, believes research and development (R&D) and ongoing innovation are crucial to this growth.

"All our R&D technicians are first-class." honours." Ms Eriksen said. "So all the people who work here know that they really are with the best of the best, and that's across the board.

"It makes it a good place to be because intelligence is feeding off intelligence and that also spreads through our administration, production, warehousing and sales support departments

"Everyone's got buy-in, and I think that's important. If the guys in the factory have an idea, they know they have a voice and they get heard."

Ms Eriksen said the company's significant investments in R&D were focused on the development of new food products for a growing niche market - people living with the medical condition dysphagia.

Some people with dysphagia have problems swallowing certain foods or liquids, and thickened food and drink products are a vital nutritional requirement for those experiencing the

Flavour Creations has expanded rapidly into hydration and nutrition solutions for people with dysphagia, servicing a core market of medical professionals including speech pathologists, dieticians, nursing homes and hospitals

The company's products are researched and developed by a dedicated team of food scientists and manufactured at a

vast purpose-built factory at Tennyson in Brisbane's south.

It has grown to more than 90 staff, with further expansion on the drawing board to service growing export markets such as Europe and China.

"Worldwide, we are the market leader," Ms Eriksen said.

"We're signing a deal at the moment where the products will be exported to five of the major countries in Europe next year, and it will be under our own brandina.

Flavour Creations also has strong links with local retailers including Woolworths, which launched an innovative shelf-stable cheesecake range in its stores nationally under the company's Nourish brand.

Ms Eriksen said Flavour Creations was so advanced in innovation that it was creating products before its customers even knew they needed them.

"We keep re-examining or reviewing our product offerings and asking how we can improve them," she said.

"A part of our own program of continuous improvement and responding to market demands - by the end of this year we'll have all of our products onto natural colours. So there'll be no artificial colours, and we're also moving across with all natural flavours."

Ms Eriksen said commercialisation lead times varied from three months to two vears, underlining the importance of rigorous business planning.

"I'm from the accounting side of the world but have always been involved in food businesses," she said.

"I saw a need in the market, investigated the area thoroughly, spent a lot of time researching and came up with some products to fill a market niche."





BRISBANE INNOVATION **SCORECARD 2013**

The 2013 Brisbane Innovation Scorecard is a unique and candid glimpse into the ways in which innovation is approached and executed within Brisbane businesses.

An Asia Pacific trailblazer Brisbane has the ambition, credentials and innovative spirit to prosper in the emerging world of the 21st century.

Brisbane's economy is estimated to be worth \$135 billion in 2013, and by 2031 it is expected to reach \$217 billion.

Initiatives such as the 2013 Brisbane Innovation Scorecard recognise the creative approach of businesses that develop unique solutions through

The scorecard acknowledges the hard work undertaken by these firms to compete with international markets, improve outcomes for customers and, in turn bolster the reputation and economic strength of the city of Brisbane.

Key findings

Progressive Brisbane businesses are applying innovative strategies to their products and processes to add value for customers and bolster performance.

The 2013 scorecard uncovered three main approaches to innovation used by businesses in the survey sample of 330.

These businesses responded to tough economic conditions and focused on retaining market share through developing innovative strategies inspired by customer motivations by:

- Innovating to gain market differentiation.
- 2 Innovating for customer simplicity.
- 3 Innovating for customer transaction efficiency.

Results showed many innovating businesses exhibited more than one business model

Almost 40 per cent reported investing in one or more significant innovations in the past three years, with better overall performance achieved by firms innovating across a broader range of their business operations.

INNOVATION CATEGORIES

Innovation types

The scorecard results identified two main types of innovation:

- 1 novel new to the industry sector
- 2 non-novel new to the business only.

More than half of innovating businesses reported investing in innovations that were new to their industry.

Innovation by industry

Larger businesses were more likely to invest in higher levels of innovation activity.

More than 55 percent of larger firms (more than 200 employees) innovated, with fewer than 30 percent of micro firms (0-5) reporting innovation activity.

Different industry groups reported significant differences in innovation

The sectors found to be most likely to

- 1 Professional, scientific and technical services (47 percent of businesses in this sector reported significant innovations)
- Manufacturing (51 percent reported significant innovations).

Some industries were more likely to invest in novel innovations than others - i.e. new to both the business and the industry:

67 percent of innovation-active businesses in the information and media

57 percent in manufacturing

54 percent in professional, scientific and technical services.

Innovation and performance

There was a substantial correlation between innovative practices and enhanced business performance throughout the 2013 scorecard survey results.

So how do successful businesses innovate?

Despite having sector-specific issues to balance and varying reasons for innovation, results showed the overall focus of innovation activity was on value creation for customers

For example:

- Saving customers money
- Improving the user experience
- Providing new goods or services.

Scorecard recipients indicated five performance indicators that drove their innovation activity:

- Profit performance
- 2 Growth performance
- Market performance
- 4 Customer performance
- Overall performance.

Innovating firms were more likely to be better at market and customer performance than non-innovating firms.

Businesses that carried out both novel and non-novel innovation were most likely to have better overall performance, profit growth and market performance

Results showed novel innovators were not finding immediate performance advantages, possibly due to the longerterm strategy required to create, implement and market innovations new to the industry

2013 Innovation Scorecard highlights

38.5%

of Brisbane businesses report significant innovations in the past three years.

67%

of information and media businesses report "new to industry sector" innovations. 51%

of manufacturers that innovate have stepped up activity in the past three years.

57%

of manufacturing businesses report "new to industry sector" innovations.

55%

of large firms (more than 200 employees) report significant innovations in the past three years.

80%

of innovating businesses adopt strategies already used by competitors. Businesses using multiple forms of innovation perform better.

New-to-the-industry innovations take longer to generate a performance advantage.

Case Study -Oniqua



CEO Andrew Hill

Seeing is believing when it comes to proving to customers there is value in your products, according to Oniqua co-founder and CEO Andrew Hill.

Oniqua provides proactive and predictive asset management solutions to help companies maximise profits.

The company applies advanced analytics to customer data to identify inefficiencies and ensure their inventory, procurement and maintenance operations run as efficiently as possible.

It services some of the world's leading asset-intensive companies including ConocoPhillips, BP, Vale, Rio Tinto, Anglo Coal, BHP Billiton, Newmont Mining, Alcoa and Xstrata.

Mr Hill said there was no one-size-fits-all approach to showing a company how to save money, and each and every customer solution was an innovation of its own.

"Essentially we save companies money by analysing their data," he said.

"We started out working with coal mining companies in Queensland, many of which had hundreds of millions of dollars tied up in spare parts and inventory sitting in warehouses doing nothing." An Oniqua asset management optimisation system uses data analytics to scientifically determine how companies can better manage inventory, reduce production risk and improve performance to save money.

Mr Hill said the capabilities of products usually had to be demonstrated to customers before they would sign on.

With an export market spanning more than 40 countries, Oniqua's diverse working team requires internal innovation in order to thrive.

Oniqua staff use an internal "Facebook-like" networking system called Chatter to share tins

"We also have an internal 'wiki', like Wikipedia, where staff are encouraged to share their ideas," Mr Hill said.

"We let those ideas percolate and we monitor the ones that get the most attention, and then we look at taking them to the next level.

"It allows us to capture the ideas of our staff very efficiently and can often end in the creation of a new product, service or process that enhances the company position."

THE INSIDER

Does Brisbane have the intellectual capital to drive innovation and commercialise research opportunities?



Mario Pennisi, Chief Executive Officer, Life Sciences Queensland

Brisbane is part of the world's innovation and commercialisation ecosystem and together with our partners and collaborators, wherever they may be in the world, many innovations and commercialisation activities have been started from Brisbane. These include the Gardasil cervical cancer vaccine, modified bananas which deliver significantly improved levels of nutrition to millions across Africa, and the building of the so-called bio-economy by converting biomass into products that will be our food, fibres and fuel in the future.



Fabrizio Carmignani, Associate Professor, **Griffith Business School**

With its universities and good-quality technical and further education facilities, the Brisbane area has the potential to produce a considerable amount of human and intellectual capital to generate ideas and innovation. The network of relationships between academia and business community is also growing, which in turn makes it easier to see opportunities for an efficient commercial use of academic research.



Dr Craig Belcher, Senior Director, Industry Engagement, UniQuest Pty Ltd

Brisbane is a world city. We have inspiring and entertaining arts and culture, a university in the global top 100, and a growing economy. We are seeing a systematic increase in our stock of innovation. At the same time, there is a growth of commercialisation experience resident in Brisbane. I believe we can look forward to more Brisbane-made innovations making a profound global impact.



Paul Gampe, Chief Technology Officer, NEXTDC

Brisbane absolutely has the talent needed for successful commercialisation. The city has a proud history of taking innovation and developing new products and services, with examples including the Scramjet and the Distributed Systems Technology Centre.





STRATEGIC > **AND SMART** that's Brisbane

Brisbane has been ranked as having the second-best foreign direct investment strategy in the Asia Pacific and named a Top 10 Asia Pacific leader for "labour environment" in fDi's Asia-Pacific Cities of the Future 2013/14.

The bi-annual ranking of economic, business and financial strengths is produced by fDi Magazine, a publication of the Financial Times. It grades cities on their economic potential, infrastructure, businessfriendliness and education expenditure.

Lord Mayor Graham Quirk said the accolade was another ringing endorsement of Brisbane's growing appeal to foreign businesses and investors.

"Encouraging foreign direct investment is of huge importance to the future of Brisbane and it's something I'm strongly committed to as Lord Mayor," he said.

"Council works closely with the city's economic development board Brisbane Marketing to attract more investment - and we've forged a strong reputation as one of the world's most business-friendly cities.

"In the past year, Brisbane Marketing has aggressively pursued campaigns to strengthen economic growth by targeting key decision-makers across the world through the Choose Brisbane campaign.

"Our strategy is paying dividends, with Brisbane attracting important investment in key industry sectors such as mining and resources, food and agribusiness, tourism infrastructure and civil infrastructure."

Cr Quirk said Brisbane Marketing's hotel investment strategy had contributed to the 572 new hotel rooms currently under construction in Brisbane, including the conversion of the former Chifley Hotel into a 300-room NEXT Hotel by Singaporebased SilverNeedle Hospitality

"The global resources hub project has also attracted important investment to Brisbane," he said.

"Recently, we've seen engineering and construction companies such as Equinox Engineering, software solution companies like Enersight and mining equipment and technology services company MineSense establish operations here."

Cr Quirk said that in 2012/13, Brisbane Marketing's Investment Attraction unit attracted investment that yielded \$430m in economic impact and created 258 jobs for the city.

"We've also won the right to host the 2014 G20 Leaders Summit, which will showcase the city's business and investment opportunities to 4000 of the world's top economic decision-makers and 3000 international media," he said.

"Brisbane is very much open for business, and targeting more investment will remain one of our top priorities.'

fDi's Asia-Pacific Cities of the Future 2013/14 rankings assess a range of data to classify the cities which make business expansion, economic development and inward investment a priority.

"The Choose Brisbane campaign and G20 Summit reinforce our place as Australia's new world city and complement our Brisbane in Asia Strategy, putting us on the front foot for the Asian Century," Cr

The fDi labour environment category methodology assessed Brisbane on education expenditure, literacy rate, number of tertiary education centres and the percentage of the population identifying as students.

A panel of influential experts from the FDI industry assesses cities based on their growth potential and opportunities for investment, initiatives taken to promote FDI as well as high-growth industry sectors, and the growth in large infrastructure and urban planning projects that create a city for the future.

Brisbane Marketing CEO John Aitken said the fDi Magazine recognition followed several other notable accolades in recent months for Brisbane.

"Brisbane is recognised as a welcoming city that nurtures businesses and investors from all over the world, and the fDi Asia-Pacific Cities of the Future rankings for 2013/2014 is further validation." Mr Aitken said.

"In the past few months Brisbane has been recognised as the most businessfriendly region in Australia by the Regional Australia [In]Sight Index and 5-outof-5 for innovation by the 2thinknow Innovation Cities Index.'

For more information visit fdiintelligence.com/Rankings

BREAKING NEWS



Brisbane's Cardno wins National Export Award



Brisbane-based professional infrastructure and environmental services firm Cardno has won a prestigious honour for Australian companies engaged in international business.

The company was presented with the 2013 Infrastructure and Construction award by Prime Minister Tony Abbott at the 51st Australian Export Awards in Melbourne on November 26.

The prize was for outstanding contribution by an Australian company to international projects involving architecture infrastructure, engineering and construction services and products.

The awards recognise and honour Australian companies who have achieved sustainable international growth through innovation and commitment

Cardno collected the national award after being named Queensland category winner in October.

Cardno managing director Andrew Buckley said the award recognised the firm's commitment to operational diversity as well as its expansion into new markets around the world.

"In recent years, we have grown from a 200-person engineering business in Brisbane into a global operation with 8000 staff working in 290 offices on projects in 85 countries," Mr Buckley said.

"A strong proportion of our growth has come from international expansion, which now accounts for almost 60 per cent of our revenue.

"It is a privilege and a thrill to be recognised with this award, which I believe is testimony to the quality and commitment of our hard-working team, both here in Australia and across the globe."

Cardno's international projects range from restoration efforts in the Gulf of Mexico to oversight of elections in PNG, business skills programs for women in Zambia and hydro-electric power in Ecuador.

Cardno is represented throughout Australia and has offices in the US, Canada, New Zealand, Papua New Guinea, Peru, Ecuador, Colombia, Indonesia, Philippines, Kenya, Tanzania, United Arab Emirates, Germany, Belgium, Italy and the UK. It also has projects located globally.

Its services encompass planning, surveying, engineering and environmental services, as well as project management of development assistance programs internationally.

Legacy Way scoops major international award



Brisbane's Legacy Way was named Major Tunnelling Project of the Year at the prestigious International Tunnelling Awards ceremony in London in November.

The awards recognise the best in tunnelling around the globe in 13 categories.

The jury said Brisbane City Council's Legacy Way project stood out from the crowd for the innovative design and tunnelling methods used by managing contractor Transcity to deliver the project.

In particular, the \$1.5 billion, 4.6km road tunnel project was recognised for its record speed boring, which set a world record last year by excavating through 49.68m in a 24hour period. The best excavation month allowed one of the two tunnel boring machines to progress

Brisbane Lord Mayor Graham Quirk said Transcity's win at the International Tunnelling Awards came as no surprise.

"Council takes great pride in its reputation as Australia's new world city, and the world-class construction being delivered on Legacy Way is a credit to the work being undertaken by Transcity," Cr Quirk said.

"The appointment of Transcity to design and build Legacy Way has brought a wealth of international experience and expertise to Brisbane to deliver this vital project for the city's transport network."

Transcity is a joint venture between Spanish tunnelling and civil infrastructure giant Acciona, Italian tunnelling specialist Ghella and Brisbane engineering expert BMD Constructions.

The project placed Australia on the world map of tunnelling excellence and ahead of China and the US in the major projects category.

New senior appointment at Brisbane Marketing



Tim Piper has ioined Brisbane Marketing as the senior manager of investment attraction for Brishane's industrial sector.

Working within the industrial portfolio

of our investment projects, Tim will be responsible for working with clients from the warehousing, manufacturing, logistics and food and agribusiness sectors.

Tim's experience in business development and industrial and commercial property will help in his new role, which aims to provide Brisbane with improved employment opportunities and to drive investment into our city from both international and interstate businesses.

With his understanding of the local and state industrial markets including competition, tenant demand, active buyer/investment markets, agent networking and sales rates, Tim has developed strong relationships at a senior level.

Tim has worked for a number of large organisations both within Queensland and NSW such as Jones Lang La Salle, Colliers International, Knight Frank and Stockland.

For more information about investment opportunities in Brisbane's industrial sectors, please contact Tim Piper on +61 413 180 195 or at tpiper@brisbanemarketing.com.au

BRISBANE SET TO SHINE AS G20 PRESIDENCY HANDED TO AUSTRALIA



Australia was officially handed the G20 presidency in December, with Brisbane now fully focused on its preparations for the 2014 G20 Leaders Summit.

Brisbane Lord Mayor Graham Quirk said the city was set to become the capital of the world during the G20 event in November.

Cr Quirk said the city stood to reap long-term economic benefits of about \$100 million from the international economic cooperation forum for the leaders of the world's 20 major advanced and emerging economies.

"This is a unique opportunity to position Brisbane as Australia's new world city," he said

"The world's leading economic decision-makers will see first-hand Brisbane's world-class infrastructure, thriving entrepreneurial culture and business attitude.

"By the time the G20 is over, I want the world to know that Brisbane is a rising star in the Asia Pacific and the friendliest city on earth.

"By the time the G20 is over I want the world to know that Brisbane is a rising star in the Asia Pacific and the friendliest city on earth."

Lord Mayor Graham Quirk

"This is a once-in-a-generation chance for Brisbane to step up and take its rightful place among the emerging new world cities of the 21st century."

Cr Quirk said an estimated 4000 delegates and 3000 media representatives were expected to attend the summit on November 15 and 16, generating an upsurge in trade for local shops, hotels and restaurants along with significant international media coverage.

"We estimate the G20 will generate about \$100 million in long-term economic benefits for the city through the promotion and exposure we will receive," he said.

"Summit media and delegates will also generate significant local expenditure while helping to attract the talent, long-term investment and conventions and major events which help drive Brisbane's ongoing economic growth and development.

"In terms of tourism, we hope Brisbane's reputation as a friendly city will shine through. Next year the Brisbane City Council and Brisbane Marketing will lead a city-wide campaign to ensure locals give delegates and visiting media their warmest welcome.

"We will also be working to ensure the anticipated 3000 visiting media will be equipped with information to maximise media coverage and return visits by family and friends, and hosting pre and post-summit media familiarisations to

"The Choose Brisbane campaign... has already been seen by more than 160 million people around the globe."

Lord Mayor Graham Quirk

get stories about our city published worldwide."

Cr Quirk said economic development board Brisbane Marketing would ramp up its successful international business campaign, Choose Brisbane, to leverage the international spotlight.

The Choose Brisbane campaign, which has already been seen by more than 160 million people around the globe online, on billboards and in print, features a number of well-known identities including US President Barack Obama and other world leaders linked to "Brisbane The 2014 G20 Host City".

The campaign also features cervical cancer vaccine pioneer Professor lan Frazer, Shanghai news anchor and Asia Pacific Screen Awards host Chen Lei, and Phil Larsen of Halfbrick Studios, developer of the highly-successful Fruit Ninia and

For more information visit www.choosebrisbane.com

INVEST BRISBANE

Steven Silvester, Brisbane Marketing **Director, Investment Attraction**



Invention to **Invoice**

In this edition of the Brisbane Economic Series, we wanted to highlight a key reason why Brisbane has truly emerged as a serious player in the Asia-Pacific region. The opportunity that exists in Brisbane to take leadingedge inventions through to revenue generation continues to be a strong proposition for Brisbane.

Significant public and private investments such as the world-class Translational Research Institute have increased Brisbane's research capacity and, coupled with its reputation as a safe, secure and dynamic city, the human capital has continued to move to Brisbane complementing the physical infrastructure that has been built. Coupled with the foresight of organisations such as Dutch-based global life sciences company DSM Biologics. Brisbane has built an enviable reputation for supporting innovation and

In this issue of the BES, we asked our Insiders one simple question: Does Brisbane have the intellectual capital to drive innovation and commercialise research opportunities? The overwhelming response from our Insiders was that Brisbane continues to provide the world's innovation and commercialisation ecosystem with human capital and solutions that are leading the world in many fields. If Brisbane can continue to tap into the world's interest for new solutions by bringing capital to Australia then there is no reason why this trend cannot continue.

In the later part of the year, Brisbane Marketing, through its Global Resources and Energy Hub project, continued to focus on innovation within the energy and resources sector that will be the key to delivering the productivity gains needed for the sector. That was the clear message that panellists reinforced at the Innovation Connection event held this month.

The event, hosted by Brisbane Marketing with the support of QUT Business School, brought together energy and resources industry figures to discuss the challenges of innovation integration in the supply chain, while developing Brisbane as a Global Resources Hub

City Building Projects

Since the release of the September BES. Brisbane has witnessed some significant milestones that reinforce the economic

potential of the city. Announcements of significant infrastructure developments, construction projects and the continued development of Brisbane's research and innovation capacity will position Brisbane strongly for its G20 year in 2014.

In terms of major announcements, none seemed bigger than one by the Brisbane Airport Corporation. Committing to constructing a multi-billion-dollar second runway expansion for the city by 2020 demonstrates a significant investment into capacity-building infrastructure. It will deliver the capacity needed to meet the predicted continued growth in flights in and out of Brisbane. The new runway will also enable the airport to maximise the number of flights that can arrive and depart over Moreton Bay, reducing noise exposure, particularly at night.

Also in October, the Queensland Government announced Queen's Wharf Brisbane as a major new redevelopment opportunity for the city and the offer of a casino licence as part of the integrated resort development meant that there was significant interest from Australia and internationally in the project.

Located between the Brisbane River and George Street and between Alice and Queen Streets, Queen's Wharf Brisbane is within easy reach of the city's cultural precinct, South Bank Parklands and the Brisbane Convention & Exhibition Centre. The site represents Brisbane's biggest development opportunity in decades and will be specifically tailored to cater for the increasing trend of tourism from Asia, particularly China's rapidly growing middle class

Then in late November, the Queensland Government in conjunction with Brisbane City Council announced a significant new public transport project in the Underground Bus and Train Project. The world-first 5.4-kilometre tunnel with two train lines in the lower section and two busway lanes in the upper section will deliver the public transport services needed in Brisbane for the next 50 years.

Team Update

In November, the investment attraction team welcomed Tim Piper to our ranks as the Senior Manager, Investment Attraction, managing all of the team's investment attraction activities in the manufacturing and logistics sectors.

Also, it was with great pleasure that we learnt of Brisbane's success in the Asia Pacific Cities of the Future 2013-14 awards compiled by the fDi Magazine, a division of the Financial Times. fDi Magazine compiled information on 95 cities across categories including Economic Potential. Cost Effectiveness.

Infrastructure and Business Friendliness and Brisbane was chosen as having the secondbest FDI Strategy in the Asia-Pacific region.

Rising from fourth in the last iteration of the awards to second this time, highlights the work Brisbane Marketing has been doing to further integrate our programs, cluster our strategies and campaigns to provide better outcomes for the city. The FDI Strategy category asked cities to submit details about their strategy for promoting FDI, which was then scored by fDi's judging panel. Cities scored up to a maximum of 10 points for each data point, which were weighted by importance to the FDI decision-making process in order to compile both the subcategory rankings as well as the overall 'Asia-Pacific Cities of the Future' ranking.

Christmas Wishes

May I take this opportunity to thank our corporate partners; BDO, Cardno, Fragomen, Hopgood Ganim, Ray White and Three Plus, for their continued support of our team over the year.

Thanks must also be extended to Austmine, QUT Business School, One Key Resources, London and Partners, UKTI, the Government of Canada and Trade and Investment Queensland for working closely with us on a number of initiatives over the year.

To all of our partners and allies, may I wish you all the very best for the festive season and our best wishes to you and your families for the year ahead. For us 2014, the G20 year, presents huge opportunities for the city and the investment attraction team, along with the whole of Brisbane Marketing is looking forward working with you all on maximising the opportunities for Brisbane.

Thanks for your support in 2013 and we look forward to what 2014 will bring.

If you would like to discuss investment opportunities in Brisbane, contact:

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