

ELEMENTS OF INNOVATION

It is important to stress that C-E Solutions is a small company, without generous resources enjoyed by other larger enterprises. Despite this limitation, C-E Solutions has achieved success in project completion with the business benefitting through revenue growth and staff development.

In a sense the more complex the task, and the tighter the time frame for delivery, innovation becomes a requirement, not an option. If you have the right culture employees are motivated to solve difficult and complex tasks.

Summarised below are the elements of innovation that is evident in C-E Solutions:

- 1. Business strategy:** by establishing a focussed approach to R&D&I in a dedicated company, with skilled, competent and creative staff to tackle successful product development. For business growth and sustainability a new business was established to capitalise on project services and in field support.
- 2. Collaboration:** C-E Solutions engaged alliance partners to undertake joint development of certain elements of critical projects. This enabled the right level and skill of resources to be applied to a particular project. They also have close working arrangements with the University of Newcastle's Dampney Centre.
- 3. Product development:** C-E Solutions have achieved what others failed to achieve in certain projects, In the case of the track management system the key to success to Horus was achieved through pure innovation delivered by the active engagement of a team of professionals who applied themselves to solving complex tasks using novel means. Hawk-i also achieved very high accuracy of weapon impact measuring to within 1 metre.
- 4. System integration** – Horus demanded superior performance on the basis that huge quantities of data had to be processed simultaneously to give aircraft tracking in real time. Extraordinary hardware and software performance was delivered achieving rapid speed of data processing required for very complex computations and in the storage of masses of data. This outstanding system performance was delivered through the creative application of existing hardware. The most extraordinary achievement was the performance of the system delivered through the clever integration of commercially available hardware in a system configuration not thought of before.



- 5. Ideation and team performance:** no doubt a major contributor to successful innovation is the ability to engender a collaborative approach to solving problems. The company motto "we manage complexity to deliver to you simplicity" is achieved through the spirit of cooperation of all staff and regular project meetings featuring creative development.
- 6. Networking:** C-E Solutions is an active member of networking organisations such as the Newcastle Business Chamber, HunterNet, and Minerva. In each case the business keeps abreast of defence related projects through participation in project committees and is at the forefront of the wider business community.
- 7. Commercial:** the offer of project staffing for service contracts was struck on a novel commercial basis, attracting new interest from the Department of Defence.
- 8. Human Resources:** the conventional approach to establishing a defence focussed business would be to set up in ACT or Sydney or Melbourne. However establishing and working in Port Stephens has certainly had a positive impact on employment. Combined with a culture of encouraging involvement in the wider community through charities, community projects have created a sense of values that integrates with the wider community.



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SUCCESSFUL INNOVATORS IN PORT STEPHENS

CASE STUDY: C-E SOLUTIONS

BUSINESS OUTCOMES

Innovation in C-E Solutions has been the prime stimulus to growth in revenues, recently exceeding 95%. Staff levels have also doubled in the last 18 months. Alliance partnerships have been cemented which further increase capability and market penetration. Innovation has clearly created new business opportunities that has attracted new customers and opened up new markets. C-E Solutions is now well positioned to expand on market opportunities and increase its exposure internationally.



CASE STUDY: C-E SOLUTIONS



BACKGROUND

Communications-Electronics Solutions Pty Ltd commenced operations in January 2000, trading as C-E Solutions, later adding C-E Services to its portfolio. The original C-E Solutions core team comprised tertiary qualified electronics and systems engineers with a combined 60 years experience in air forces globally, focusing upon telecommunications and systems integration.

BUSINESS VISION

With their background, the core team was well aware of the constant demand and need, for defence systems to out perform those of the enemy. It was clear that innovation was a critical factor in the defence sector and C-E Solutions management were confident that a business strategy built around innovation would help generate new business. C-E Solutions consciously embarked on a course to provide innovative solutions to Defence, centred on advanced engineering involving state-of-the-art communication systems and software engineering solutions.

WINNING STRATEGIES

The core strategy was to establish C-E Solutions as a dedicated Research, Development and Innovation company (R&D&I), targeting new projects connected to the defence industry. Initially this R&D&I would be product focussed.

As a natural spin off from its success in developing defence related products, it was also anticipated that further opportunities would present themselves in specialist 'high-tech' industries outside the defence industry.

To facilitate a profitable business emerging from their commitment to research and development, C-E Solutions recognised that the business

would require additional skills and resources to achieve the goals it had identified. Whilst the core team held considerable expertise in and managing complex projects with the overarching technical ability to oversee R&D&I endeavours, the company engaged with The University of Newcastle in a variety of ways to acquire the people with the specialist skills to actually do the work. This allowed the company's core team to continue to work on revenue related efforts, as well as allowing the company's Board of directors to continue working on the business, rather than within it.

In 2004 C-E Solutions was admitted as a participant to the RPDE (Rapid Prototyping Development and Evaluation) Program of the Australian Defence Organisation, the first regional company to be given this recognition. It was third party certified to the international quality management Standard ISO 9001, originally achieving this in 2003.

To capitalise on growing opportunities for project related services, and to provide business opportunities in servicing products designed and developed by C-E Solutions, a new arm called C-E Services was established 2008. This business arm follows a broad consultancy model offering project and engineering support services required by the Department of Defence. It has now grown to provide in-field support to the products developed by C-E Solutions. The C-E Services initiative provides the group with a new, sustainable business opportunity, offering steady revenues and additional skill development and career opportunities for its staff. It also complements the more volatile defence related product development business activities undertaken by C-E Solutions, and has been a successful business strategy, one which will be nurtured into the future.

At the Hunter Manufacturing Award presentation night on Friday 23rd October 2009 C-E Solutions was recognised for its outstanding achievements in two areas. It was granted the prestigious awards "Excellence in Innovation" and "Excellence in Technology". In accepting the awards, General Manager Boris Novak acknowledges that "this success is largely attributable to the ability to harness the creative energies and skills of our staff and to execute clear and focussed business strategies".

WHY PORT STEPHENS?

Normally staff in the high end area of IT, systems integration and communication systems would be based in a capital city, with the obvious impact in cost of living, lifestyle and transport presenting some difficulties.

Not to be underestimated was the conscious decision by C-E Solutions' Directors to invest in a business of this type in Port Stephens. Given that travel frequencies were anticipated to be relatively high, it provided close access to both Newcastle Airport for travel into and out of the work environment. At that time the emerging low cost jet services offered at Newcastle Airport and proximity to the Port Stephens area provided a significant advantage to the planned future operations. The company also forecast a major expansion of the aircraft assembly and service industry in the Williamtown precinct, an astute assessment in the light of recent project announcements.

It is clear that establishing this business in Port Stephens was, along with the opportunity to perform interesting and satisfying work, a major factor in attracting key personnel.

The Directors knew that they would need to attract a high calibre of staff to the business to help achieve the company vision. With a lifestyle the envy of counterparts working in capital cities, the Port Stephens area has proven to be a major point of difference in competing for quality staff. Housing affordability in the Port Stephens area has been an additional bonus for staff moving to the area. Boris Novak, founder and General Manager, said "we have successfully attracted several key staff members from other areas, with the Port Stephens lifestyle offering attractive benefits. The lack of background noise, transport problems and other psychological intrusions inherent in industrial or CBD areas of capital cities doesn't cramp our creativity. Our office environment is peaceful and productive. We all love living and working in Port Stephens"

PRODUCT DESIGN

Two examples of product development by C-E Solutions are shown below:

PROJECT "HAWK-I"

This project commenced in 2008 with a view to providing an accurate weapons firing testing system. Aircraft firing rockets or other projectiles require rapid feedback on the impact accuracy to assist air crew in improving weapon effectiveness, as well as providing the ability to test new weapon firing systems and technologies.

Hawk-i is a next-generation Weapons Impact Scoring System (WISS) for air-ground and ground-ground weapons firing ranges. Hawk-i leverages new technologies to deliver a range scoring system that is robust, accurate, simple to operate and extremely cost-effective.

As a tribute to the accuracy and efficiency of the system developed by C-E Solutions the Royal Australian Air Force (RAAF) has selected Hawk-i to be its replacement air-ground range scoring solution across Australia, which has been proven in the harshest of testing environments.

PROJECT HORUS

In early 2008 the RAAF Surveillance and Response Group requested participants in the RPDE program to improve the production of the Australian Recognised Air Picture (RAP). C-E Solutions responded to the challenge and developed a new system that can manipulate enormous amounts of data on aircraft tracking so that live tracking of aircraft movements could be overlaid with historical patterns of aircraft movements. In so doing unauthorised movements of aircraft can be detected.

SERVICES

As a result of the innovative product development C-E Services now has opportunities to provide field services to support the product implementation of both Hawk-i and Horus.

These field services provide a necessary product support aspect as well as new income generating prospects, which complement other services offered to the defence industry.

The design and construct capability services was also put into effect in the Radome at Bathurst Island. This project demanded innovation not only in radio communications but also ventilation, air conditioning and dust control, the standards for which were met or exceeded on commissioning tests.

