

Practices of Successful Organisations Applied to Centres of Excellence in New Zealand

Joseph D. Lawrence and Pat S. Bodger
Electric Power Engineering Centre
University of Canterbury, PB 4800
Christchurch 8020, New Zealand

Abstract- Engineering management research undertaken at the University of Canterbury's Electric Power Engineering Centre (EPECentre) in Christchurch, New Zealand, looks at entities which are fast becoming common place among many institutions internationally, called Centres of Excellence (COE). These strive to bridge the gap between public sector and private sector capabilities, including academia and industry, in the pursuit of knowledge and enterprise. COE are physical or virtual centres of research which concentrate existing capacity and resources, in order to enhance the pursuit of excellence, typically on Research and Development (R&D). These enable personnel to collaborate across disciplines and institutions / on programmes or projects, either long-term or short-term, that are locally relevant and/or internationally significant. The first phase of the research takes a 'big picture' overview on what organisations need in terms of culture and practice to enable successful operation in a wider context. It applies current practices of successful organisations and business leaders to the COE concept in New Zealand. A range of organisations have been studied, including the writings of both academics and managers, to look at factors that make organisations successful in three dimensions, namely strategy, culture, and operation. Some areas examined include bridging the knowing-doing gap, flexibility, attitudes, interdependence and independence. The ultimate objective of the research is to develop a definitive conceptual model for COE, linking both strategic and organisational factors in an engineering context that could potentially serve as a 'global guide' to assist with the establishment, operation, and growth of seemingly boundary-less (national or international) COE.

I. INTRODUCTION

Centres of Excellence (COE) by definition [1] are physical or virtual centres of research which concentrate existing capacity and resources in order to enhance the pursuit of excellence, typically on Research and Development (R&D). These enable personnel to collaborate across disciplines and institutions / on programmes or projects that are locally relevant and/or internationally significant.

The New Zealand government requested proposals for the establishment of government funded COE in 2001. Since then, many have been established, with or without government support. One such Centre of Excellence is the Electric Power Engineering Centre (EPECentre) at the University of Canterbury, in Christchurch, New Zealand. It is 100% industry funded, and was established in 2002, in response to a shortage of electric power engineers in New

Zealand.

Engineering management research at the EPECentre looks at the underpinning approaches used by many of the world's best entrepreneurs and most successful organisations, in terms of management culture and business practice, and directly applies these concepts to the operation of COE in New Zealand, using the EPECentre as a case study.

II. CHARACTERISTICS OF SUCCESSFUL ORGANISATIONS

Research findings have identified three dimensions that characterize successful organisations. The three dimensions are strategy, culture, and operations, respectively. By looking at the individual themes that define the three dimensions, organisations such as COE could, in practice, adopt these characteristics to improve and thrive for excellence.

A. Strategy

Strategy is the foundation (the 1st dimension) for putting into action any idea or venture. From the point of view of building something of lasting excellence, it is important to envisage something that will be around long after one single person or group has departed. This means, not only envisaging something good, but actually focusing on creating something excellent. A transition that does not happen overnight; no single action, no grand program, no miracle or lucky moment, it is more about building something from the ground up, slog after slog, and something that will gain momentum up to the point it starts to make one breakthrough after another [2].

This implies that a Centre of Excellence cannot be artificially created, instantaneously. It has to grow and evolve according to proven laws of business, one step at a time. This in turn paves the road ahead towards excellence, mitigating risk in the process, and helps establish a solid foundation for the practice of excellence.

Success in the business world does not solely depend on planning, especially the 5 year plans business schools advocate. Success is more dependent on how an entity reacts to unexpected opportunities [3]. In essence, an entity should avoid being stagnant while looking for the next opportunity. It should picture the one in hand as the opportunity instead,

i.e. organisations should make the most of what they have now, in the best possible way [4]. To achieve this, the key is to ensure that any strategy is kept as broad as possible. Then the strategy does not need to change all that often. According to Jack Welch, former CEO of General Electric (GE), as well as spending plenty of money up front, an entity should put the best, hungriest and most passionate people in leadership roles” [5]. This is particularly true in the context of COE, where innovation must be nurtured with passion [6].

Another key is realizing that there are no shortcuts to any place worth going [4]. Excellence should always be strived for even when mediocrity is all that is required. The end goal should be to pursue long-term growth and prosperity [6], even if there is little demand in the commercial world for real excellence (there is much, much more demand for mediocrity) [4].

For COE, winning R&D contracts and repeat business is also of major importance. By doing what you do well, clientele will come back and bring their friends [9]. According to billionaire businessman Donald Trump, “an organisation must be able to brand itself and toot its horn” [7]. Hence, let it be known that a Centre of Excellence practices excellence, by proactively promoting its capabilities and achievements. It will not be a success if it is kept secret [6].

The importance of ‘marketing’ is something that has been largely neglected in current models for COE in New Zealand, with the main focus being on potential research opportunity alone. This approach must change for COE to succeed. All personnel involved in COE should be passionate salespeople, because nothing happens until a sale is made in business [2] and nor will it in COE. It is not just about being technically excellent. Negotiation skills to win contracts and the ability to bring in funding are also vital to COE. According to Stephen Tindall, a successful New Zealand entrepreneur, “*we have plenty of great ideas in New Zealand, but this is not enough. Marketing and the ability to close deals is the ‘X’ factor*”.

Additionally, it should be understood and recognised that individuals in an organisation know their business best. An organisation should not need to be overly dependent on external consultants [5]. This is very true when it comes to the activities and programmes of a Centre of Excellence and its R&D initiatives or direction. “If you manage a sports team and wanted to make important decisions about game play or player selection, would you listen more closely to an external consultant or the team coach?” [5].

In strategic terms, organisations should avoid being afraid to try things, because in the business world, execution equals success. Execution and action is 80% of the business game, which is a concept not given enough emphasis in business school. While strategy can be copied, the process or style of

execution cannot. For this reason, business models are difficult to copy [2]. Hence, no one model for a Centre of Excellence will work for another. Knowing what to do is not enough. An organisation must in spirit and action become a ‘doing’ organisation and avoid what is known as the ‘knowing-doing gap’ [8].

When it comes to exploring new areas and implementing new ideas, there will always be imitators and competitors that claim to be the best. The aim is to keep critics in perspective. Critics can serve a purpose; using their keen eyes to organisations advantage [7]. If the criticism is constructive, it is worth taking onboard, provided the source is reputable.

Finally, the purpose of change is not to make something different, but rather it is to make something better [6]. This should be a key principle adopted by the leaders’ of COE and their host or funding supporters, whether it be academic institutions, industry and / or government agencies. In business, the competitive environment calls for radical manoeuvres. What better to adopt than a military style approach to strategy called the KISS principle (Keep it Simple, Stupid) [2]. COE should simply apply commonsense to operational strategy, remembering that complexity is not to be admired, it is to be avoided - “*You must draw on language, logic, and simple commonsense to determine essential issues and establish a concrete course of action*”, Abraham Lincoln [3].

B. Culture

After strategy comes ‘culture’, the 2nd dimension. Culture in this perspective means the predominating attitudes and behaviours that characterise the function of an organisation [9]. The most critical factor that determines the culture of an organisation is its people. Many of the world’s most successful organisations, such as GE, practice a free spirited nurturing type philosophy when it comes to people and culture.

One of the founding principles of this philosophy is that an organisation should bet on people more than on strategies [1]. This is because action counts more than elegant plans or concepts, i.e. as the operational environment evolves and changes, an organisation should strive for flexible and adaptable strategies to work in with the people [8].

To promote this, fear and inaction must be driven out from organisations. Inaction, not unsuccessful action should be punished. Open communication and innovative thinking should be encouraged. Celebrate and learn from mistakes, and avoid penalizing people for trying new things [6]. Reward results and meeting objectives, not ‘butt on seat time’. This reinforces the fact that not all activity equals productivity and results in success.

For efficient productivity and for a business enterprise to succeed, successful organisations aim to involve the best people, because they know they will do the best job, not the most available [5]. An organisation must also know how to recruit and keep good people, particularly in the context of COE or R&D type businesses, where integrity is critical when dealing with Intellectual Property (IP) and commercially sensitive projects [6].

It is also a matter of getting the right people for the right job, such as getting professional experts to do expert work in R&D. The COE game also has a lot to do with marketing and negotiating, as well as the technical capability of the organisation. When it comes down to winning contracts and attracting funding, a mixed approach is required by its people.

A manager needs to be a good team builder [6]. One way to achieve this is to focus on the talent instead of the title. It is up to a leader to allow it to unfold. By looking around for fresh possibilities within an organisation, with cultivation and support, dormant talent can be discovered. But be aware, that sadly, in some circumstances, internal status comes from being negative and critical of others ideas [5]

For this philosophy to work, an organisation should be committed to hiring and cultivating talent [2]. In COE, this means support and develop people during the transition phase from being scholars to world class researchers.

Once the right people are hired and prove themselves, recognize that stars can't shine till the sun goes down [2]. In essence, empower people to make decisions and decentralize decision making. "Few things help an individual more than to place responsibility upon him, and to let him know you trust him", Booker T Washington (1856-1915). Once the stars are found, give them undivided attention and keep them shining [6]. Simply, let good people do their job [2], and give them freedom to operate. Provide direction, expectation, and support, [6] when needed.

Other points of interest are eliminating hourly compensation and allowing a salaried approach to promote work life balance. This means valuing time [5], putting a stop to endless pointless meetings, and training people to do it better than you, i.e. employee coaching can strengthen a business [6].

Most of all, when success is achieved, don't forget to 'share your cookies and toys'. This implies that excellent work requires equivalent reward [2].

C. Operations

Once an organisation gets its strategy and culture in perspective, the next factor is its operational methodology.

This is the 3rd dimension. The best practice approach taken by successful organisations and leaders in terms of operations are also of value to the functioning of COE.

One key operational approach is to contribute to the community [2]. This should encompass the belief that an organisation should never stop striving, never stop learning, and never stop teaching. In the context of COE, striving equates to persistence in winning contracts or attracting funding, learning equates to staff development, e.g. workshops, part-time study, etc., and teaching equates to publications/conferences, specialist lectures, and conducting workshops to disseminate research findings and information.

An organisation should, to a large degree, let the market drive what it does. This is particularly useful to COE in terms of R&D topics. An organisation must also recognize where they are going, to get others to follow [2], especially when seeking support for initiatives from sponsoring bodies and / or academia partners.

However, none of this matters if the operation of an organisation is not kept simple and options are limited. Organisations must always develop parallel plans in the event that an original solution fails to fit [2]. In the world of R&D and COE, this relates to risk management and contingency planning. This means, being optimistic, but always being prepared for the worse [7]. For COE there are plenty of ups and downs in an environment built and dependent on external funding and client contracts. The way to overcome these obstacles and ride out the waves is for an organisation to do its homework and be prepared for the unexpected.

If all else fails, successful leaders say go with your gut [7], i.e. organisations should learn to trust instincts when it comes to operational matters and planning. But, whatever happens, the principles of an organisation should not be compromised. Value integrity, and stand against plagiarism and IP theft.

With respect to income from R&D, know your value. Don't be afraid to charge enough for your products or service [2]. If excellence is required out of a Centre for Excellence, the cost should match.

Always look for ways to make it easier to do business. This means making all operational processes simple and cost effective, as far as practically possible. To enable this, an organisation should aim to cut out the middleman [7], minimize red-tape bureaucracy, and never let profit get in the way of doing what's right for the customer [5]. This applies to client funding of R&D in the context of COE. *"Any intelligent fool can make things bigger, more complex, and more violent - It takes a touch of genius, and a lot of courage to move in the opposite direction", Albert Einstein. [10].*

To facilitate this process, successful organisations always consider what the other side wants [7], i.e. what's in it for them? This is a useful methodology for COE, when trying to win contracts and funding. If an organisation is aware of the needs of the customer, it is much easier to give a customer a good, fair deal [5]. In the case of COE, provide a value added service, whether it is promotion or marketing opportunities for clients, or value added results from R&D.

Other factors include being reasonable and flexible in business. If not, an organisation won't be able to react to the changing environment, and will miss emerging opportunities. Similarly, COE should also be flexible and adaptable, to allow them to manoeuvre to changing conditions. It also helps to communicate daily with your customers. If they are not talking to you, they are talking to the competitor [5]. Simply put, keep in touch, as often as possible with current or potential clients and sponsors. Most importantly, don't forget to say thank you. Tap into the emotive psyche of customers.

As far as effectiveness goes, do not let talk or decision making be a substitute for action, e.g. meetings where everyone discusses a course of action, but nothing is ever implemented, conducting a presentation as a substitute for action, preparing documentation as a substitute for action, and worst of all, mission statements as a substitute for action. [8]. A good way to achieve this is to hold regular gripe sessions. Do it on company time and encourage discussion [6].

All this boils down to getting operational planning right, from the point of view of the organisation. To facilitate this, involve the right people in the planning process, and at the governance level. Boards should not get into an us versus them dynamic, with the very people they are supposed to help [5]. People need to work together.

III. DISCUSSION & APPLIED CASE STUDY

Much of these broad and proven theories provide dynamics that could be combined, within the three dimensions identified, i.e. strategy, culture, and operations, to provide a platform for application to COE in New Zealand, and quite possibly to international COE, currently outside the scope of investigation for this stage of the research. In the case of the EPECentre, aspects of the three dimensions identified can be either directly applied, to varying degrees or adopted in an evolutionary, incremental process.

In terms of strategy, i.e. the 1st dimension, the EPECentre has adopted a broad strategy, in synchronization with the recommendations of successful leaders. Its mission is 'power engineering as a field of excellence in New Zealand'. Under this key statement, there are four broad categories, namely education, research, innovation, and industry interaction. These categories are wide-ranging and general enough to

allow strategy to adapt and endure any changes the operational environment may bring.

Another point of strategic importance, practiced by the EPECentre, includes a focus on marketing and communicating with its customers, i.e. academia and industry. The EPECentre implements a calendar of annual events, from field trips around New Zealand, distribution of quarterly E-bulletins throughout the EPECentre network, work placement for graduates, R&D Expos, conference attendance, sponsorship of technical events, and conventions [11].

The cultural aspects of the EPECentre (2nd dimension) focuses on being an action orientated organisation, where risks are assessed and new opportunities are explored. One such example has been the expansion of the centre to a network of over 500 industry and academia contacts, and over 30 associated staff, including a Director, a fulltime Manager, several R&D Engineers, and many academic researchers, comprised of students and staff of the University of Canterbury.

The centre also acknowledges the support of its academic associates and students in R&D, by rewarding them with R&D project income to either top up existing salaries or to provide scholarships, respectively. It has also adopted a mixed approach to win contracts and attract funding, by bringing people with technical and marketing expertise together. Proposals involve EPECentre staff, academics, participating students, and external consultants, using the simple and most straightforward knowledge transfer mechanism possible, i.e. open communication.

The EPECentre also focuses on the talent instead of the title, to discover dormant talent. For example, a Laboratory Technician that showed outstanding talent in the lab was given an opportunity to work on an R&D Project. He produced excellent results.

Finally, the operation (the 3rd dimension) of the EPECentre is governed by a high calibre, pan industry board, represented by CEOs and GMs from New Zealand power industry companies and a Professor from academia. It also conducts several discussion sessions with students and academics in the University of Canterbury. Hence, the centre is geared and orientated towards both the academic and industry sectors.

The purpose of COE is to bridge the gap between academia and industry, and the EPECentre does this by being adaptable and flexible. It does not follow a 5 year plan. Instead, the board of the EPECentre meets every quarter during the year and the business plan is adjusted as needed. In essence, the EPECentre allows the market to drive its operations.

Further, in line with successful organisations, the EPECentre recognizes the need to contribute to its community. It has identified the direct and important relationship between the school sector, the tertiary sector, and research output. Hence, it is focused on encouraging and cultivating talent, in the so called talent pool, i.e. students coming through schools into the tertiary environment that could potentially become future leaders and researchers. Hence, the EPECentre is activity involved in marketing its discipline at the University of Canterbury, and either directly or indirectly initiates over 20 premium scholarships per year. It is the most pro-active entity in the University of Canterbury when it comes to offering scholarships. It also has a strong working relationship with the local branches of international institutions, namely the IEEE and the IEE, and the EEA (Electricity Engineers' Association) in New Zealand, to implement joint initiatives. It has recently established a share of benefits agreement with the Australian Power Institute (API).

Another positive attribute of the EPECentre is that it is focused on developing and actioning a strong working relationship, to serve the needs of its industry sponsors and host University. For example, the EPECentre operates a work placement program for students within industry sponsor companies, and conducts R&D to solve industry relevant issues [12].

A quality highly valued by the EPECentre is academic freedom and integrity, balanced with the need to protect and operate R&D projects with confidence, on behalf of funding organisations. This is in terms of protecting their IP and the nondisclosure of commercially sensitive material to the public or competitors. There have been occasions where the EPECentre has realized the unethical approach of the underworld commercial sector in this area. One such example was a small company that approached the EPECentre with an interesting proposition and an existing product, owner 'unknown'. They wanted to reverse engineer this product to create a so called new product. The EPECentre swiftly turned down any involvement with the project and the company.

By adopting characteristics of successful organisations, the EPECentre has more than met its original goals, which were to increase power engineering graduates in New Zealand and to increase industry academia collaboration. There are now over twice as many graduates entering industry as a result. Through an action orientated approach focused on people, the EPECentre is moving incrementally towards being a solid and unique Centre of Excellence in New Zealand.

IV. CONCLUSION

By applying current best practice of successful organisations and business leaders to the COE concept, segmented into three specific, interrelated dimensions (strategy, culture, and operations), research conducted by the

Electric Power Engineering Centre at the University of Canterbury in New Zealand, has outlined the first steps towards developing a definitive conceptual model for COE. The model aims to link both strategic and organisational factors, and potentially serve as a 'global guide' to assist with the establishment, operation, and growth of seemingly boundary-less, national or international Centres of Excellence - *"If the mind can conceive excellence, the spirit can achieve excellence"*.

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Joseph D. Lawrence received his Bachelor of Electrical and Electronic Engineering and Master of Engineering Management from the University of Canterbury (UC), in Christchurch, New Zealand. He is currently working towards a Ph.D. degree in Engineering Management, also at the UC. He is the fulltime Manager for the EPECentre, in the Department of Electrical and Computer Engineering (ECE) at the UC. He has been with the EPECentre since its inception, and produced the business plan for its establishment in 2002.



Pat S. Bodger received his Bachelor of Electrical Engineering with 1st Class Hons and Ph.D. degrees from the UC, and is the Director of the EPECentre. He is also Professor of Electric Power Engineering, and the Head of Department of ECE at the UC, in Christchurch, New Zealand. Professor Bodger has a track record of 24 years of industry-academia collaboration and R&D, and is one of the original founders of the EPECentre.

Visit www.epecentre.ac.nz for further information on the EPECentre.