

## Engineering Leadership Conference 2008

Perth – 10<sup>th</sup> to 12<sup>th</sup> September 2008

### ‘Engineering Leadership by Head and Heart’ – a balanced mix of Technical and Social Inputs

Presented by Bill Lawson

#### **Preamble – Why am I here doing this Paper?**

Preparing and presenting formal Papers takes time and effort. Whilst I appreciate the opportunity with CELM, it is for me a bit ‘special’ as follows;

*A couple of years ago, I visited a terminally ill SKM colleague in hospital when he was near his end and he rued to me that he wished he had applied some of his time and talent as an Engineer to the ‘community’ space as well as the ‘technical’ space where he had excelled for over 40 years. I decided then to try to do my bit to encourage Engineers to benefit from his insight.*

#### **Introduction – ‘my heart and my head’.**

I write these words as a professional engineer who is proud of the profession I have practised for now 37 years. I enthusiastically point out all the things Engineers do whenever I get the chance in either informal or formal forums. I truly regret that so many of the wider community still think Engineers only drive trains and aero-bridges and have no idea of our role in making the daily miracles happen with the physical and cyber infrastructure which citizens use every day. I also wonder why it is that there has been no Engineering based soapies on TV? I have concluded that it is us to blame for failing to recognise the need to promote our profession in a truly strategic and professional manner.

During my career, I have met and worked with many very clever, truly innovative and hard working Engineers and have marvelled at what technical outcomes we have achieved by working together. I have also worked with many good people who come from the wider community as co-volunteers in the front trenches of welfare work in Australia. I have also marvelled at what we have done together rescuing people in need through the mud, blood and bandages with a mix of compassion, care and action.

Then, one day 20 years ago, two things struck me;

- In my day job as an Engineer I was dealing with ‘causes’ and devising ways to control and live with them – like gravity, for instance.
- In my volunteer job in welfare I was dealing with ‘consequences’ in the perhaps naive expectation that help was on the way and that someone else in Canberra was attacking the ‘causes’ of the misery I was trying to help alleviate.

That day, I realised that help was not on the way and that dealing with consequences had become mindless for me, overcome as I frequently was with the emotional stress and trauma of the front trenches of welfare work. I decided I needed to apply my engineering approach to seek out, understand and then devise ways to control the causes of the pressing welfare needs with which I had become exhausted. I therefore consciously decided to get out of the front line and left it to the heroes and heroines who still labour there today. In doing so I then felt a bit hard hearted and cowardly - and still do. I remain full of admiration for the many, many volunteers still in the front-line and acknowledge them whenever I am able – including here today.

What I am trying to say is that for the last 20 years I have been trying to applying my now well worn engineering mindset to some of the pressing social issues facing us in Australia today – ‘Youth Unemployment’ and ‘Indigenous Disadvantage’ in particular. This Paper seeks to explain my thinking and actions to date and then reflect on the lessons I have learned in doing so. I do not profess to be an expert, but rather a practitioner who seeks to combine ‘heart and head’ to address these two pressing issues. This Paper is therefore not an academic treatise, but rather a journey in search of understanding of causes with the objective of creating positive consequences.

### **The Three Sectors – ‘Public, Community and Private’**

I think it is helpful to reflect on the nature of the three sectors which make up Australia today (the Public Sector, the Community Sector and the Private Sector) and to identify their primary drivers.

#### Firstly, consider the Public Sector.

This sector comprises both elected members and bureaucrats of government at three levels; viz Federal, State/Territory and Local. Each has specific domains and roles and responsibilities which, when aggregated together, combine to produce the wonderful country we all enjoy and so easily take for granted. We are safe, stable, cared for and technologically savvy. These things should be treasured and protected. The Public Sector is typified by governance, public opinion and accountability through the ballot box. It is funded by taxation revenues drawn from a plethora of tax takes at all three levels. Woe betide us if we change it too much too quickly. Unfortunately, but inescapably it seems, decisions are often taken on a popular basis and, given the short electoral cycles of 2,3 and 4 years, they necessarily have a short horizon. Whilst we may often be critical about all this, I for one do not think we have any better option than the ballot box – look around the world and in the lessons of history and ponder the negatives of autocracy and rampant pursuit of extremes to the right or the left. I reckon the Public Sector, both elected and non-elected in Australia does a good job and only favour carefully measured change – I have no better ideas.

#### Secondly, consider the Community Sector.

As noted in my Introduction, I reckon the Community Sector is populated by heroes and heroines on whom we all rely. We should value and applaud them and do what we are able to support their work. Whilst the Community Sector relies heavily on charity and giving at many levels, I note the recent trend towards placing some taxation revenues within the Community Sector as a means of helping them – as with contracting out the work of the CES to many Job Network members with roots in the Community Sector; Anglicare, Centacare, Employment Plus to mention a few. Perhaps this is a good thing, perhaps not so good – another debate for another time in another place. The emergence of Corporate Philanthropy in the guises of TBL and CSR is creating an alternative revenue stream for the community sector – if it is clever in how it makes its pitch. Building dependence on the corporate sector will not, in my view, be successful in the longer term whereas a ‘capacity building’ approach will appeal to corporates ready to give. In my view, the Community Sector is now relied upon by the Australian Community more than ever to deliver the welfare support to those in need which is a key element of Australia caring for its disadvantaged citizens. For all the shortcomings we have in our welfare support, it does work – we have very few beggars on the streets, for instance.

Improve it we must, but we must also acknowledge and value it.

#### Finally then, consider the Private Sector – of which I am proud to be a member.

'If we don't make a profit today, we won't be here tomorrow' is the ever present driver of the Private Sector. It's there each and every day within the competitive marketplace and it sharpens the minds of everyone in the sector towards winning work and seeking that competitive edge. Little wonder that 'making money' so often characterises the mindset and motivation of those in the private sector. To prosper in the private sector means coming up with new ideas and approaches to produce that vital 'competitive edge'. This in turn creates and nurtures a 'can do' attitude which has much to offer the wider community. That said though, the world has become very much dependent on the consumer whose buying habits have always been based on price and quality. Progressively, the consumer has become more discerning regarding corporate reputation and, more recently with the advent of the Gen X's and Gen Y's into the driving seat of consumerism this has become of more importance. Today, Richard Pratt's well quoted declaration that *'If price and quality are comparable, then today's consumer will buy on corporate reputation'* is becoming more and more a fact of life. Corporates, particularly large ones, are now often reporting their performance on a 'Triple Bottom Line' basis encompassing not only 'Financial' performance and dividending but also 'Environmental' and 'Social/Community' performance and dividending. In the past few years, Corporates have placed all this into a more customised and strategic focus by utilising a 'Corporate Social Responsibility' vehicle which is able to reflect the views of all the businesses stakeholders – staff, clients/customers, management, shareholders and the public at large. Interestingly, the national skills shortage has even made this an 'Employer of Choice' issue with prospective and existing staff voting with their feet to favour 'good' corporate citizenship.

Over the past decade or less, all this has combined to create an environment in which the private sector is now entering into the community sector's space with the overt encouragement of the public sector. Well utilised, this creates marvellous opportunity in that it brings the private sector's innovative, free-thinking and problem solving outlook to bear on the country's pressing social issues which have for so long been impeded by the necessary constraints of the public and community sectors – as outlined above.

The challenge for Engineers who have been taught to look for and understand causes of problems and then devise either controls or solutions to them is to cross the divide between technical and social issues. My strong assertion is that Engineers need to recognise the potential role they can play whilst the wider community needs to realise how much Engineers have to offer and invite them to play.

### **'Head and Heart' – 'Tech-heads have hearts too!'**

Despite our typically engineering outlooks and opinions (just ask our spouses!), we Engineers do in fact have hearts. We are just as moved to compassion as anyone else when we see and hear of situations of deprivation and destitution. Perhaps we even wonder in private why 'someone doesn't do this or that' which seems to us to be the cause of the problem? I think though that we largely don't think it is our domain but the business of the Public and/or Community sectors.

My assertion is that if we turned our problem solving minds towards the issue at hand, then we are likely to come up with solutions which are not driven by 'consequences' but rather by 'causes'. *That's because that's how we have been trained to think and have been doing so throughout our careers.* In my experience, these sorts of problems are usually solved by heart, not head. *That's because that's how the community sector thinks and works – motivated by immediate and pressing need.*

So what I am advocating is that Engineers should get involved in this space – preferably by invitation (which pre-supposes that they are first recognised as having something to offer through their problem

solving outlook) and if not, by 'pushing in'. Again and again in my time in the welfare front trenches I have seen the faces around the table seeking to deal with a pressing issue solely focused on consequences – the 'bleeding hearts club' is a rather cynical but perhaps fair descriptor.

Put bluntly, I reckon this is about Leadership and I for one think Engineers have a lot to offer. Two things need to happen;

- 1) Engineers need to realise that they have much to offer in leadership and problem solving in the 'social space' as well as the 'technical space';
- 2) Engineers need to be invited to participate in the 'social space' normally closed to them.

### **Engineers' Attributes – 'expected and un-expected'**

Engineers are problem solvers having had their brains bent by at least 4 years intensive tertiary study followed by careful and rigorous career development within a now formalised CPD environment. We all know that to get to PE status, we prove we have good brains and analytical capabilities. We have all seen many good examples of the fine capabilities of Engineers evidenced by many wonderful projects which serve the community's needs across a very wide spectrum.

I suggest that our generic approach is almost always to invest time and intellect in understanding what causes and impacts on a 'problem' – we call this 'analysis' - and then devising ways to control or remove causes – we call this 'design'. In our careers we do this so many times that we perhaps don't realise that we do it as a matter of course. In fact, like so many things in life, when we 'do it' without 'counting it', it's probably because we are doing it very well. I think we do 'do it' very well, so well in fact that the community expects it done without even realising what it entails – another story perhaps?

What I am saying is that this 'Engineering Approach' is normally applied to technical challenges and 'expected' things happen. I am suggesting that if it is applied to social challenges then some different and 'unexpected' things may well happen. That is certainly my own personal experience, particularly in my work with the Beacon Foundation over the past 20 years against 'Youth Unemployment' and more recently in the Indigenous sector.

I therefore respectfully suggest that Engineers think about extending the application of their intellect into the social space in a field of personal interest to them. There are many social needs to be addressed in local, regional, national and international contexts – all with 'causes' awaiting discovery and analysis ahead of 'intervention/design' .

### **Engineering Leadership – 'meeting and exceeding expectations'**

As noted earlier, Engineers are not well recognised as having a leadership role in addressing social issues. This often translates into Engineers not being invited to the table to discuss such things and the team around the table often lacks in analytical outlook. If Engineers do participate, then different things happen as they bring their analytical 'head' as well as their 'heart'. They are likely to want to understand what is causing the issue under focus and in this way I believe their inputs will differ from the norm when 'hearts' prevail. I am not saying that other people don't think – of course they do. But what I am saying is that their way of thinking is dominated by emotion and empathy and this may blind them into knee-jerking to deal with pressing consequences within an emotionally charged situation. I am not saying that these 'triage' types of actions should not be taken but I am saying that they are all caused by something upstream and it is this which will likely draw the Engineer's

attention. Investing time and intellect in identifying and understanding ‘upstream causes’, will often in my view produce unexpected results. This has certainly been my personal experience in finding, isolating and removing causes of youth unemployment. I am now immersed in a similar journey in Indigenous issues.

In my view this is about community leadership and Engineers role in it.

### **The Engineering Team – ‘we need each other’**

In all that I am saying, I am presuming that we all recognise the needs for the Engineer to be supported by the whole engineering team including Drafters, Technical Officers, Tradespeople and unskilled Labourers. The design is no value without the drawings, nor the construction without the drawings. We all need each other in the same way that doctors needs nurses, phyios, pharmacists, domiciliary staff etc etc.

In seeking to connect the Engineer to the community, I also seek to engage the whole Engineering Team as we are all of a similar technical mindset and can bring that to the ‘social’ space as discussed above.

### **Some Lessons Learned - with ‘head’ and ‘heart’**

So, what have I learned as an Engineer working, to a degree, in the ‘social space’.

The first and most important thing is as I have discussed above;

- *I am entitled to be there as a concerned citizen (heart driven) and have a valid role to play in seeking to find and understand causes ahead of devising positive interventions (head driven).*

Other things include;

- *Quantified results speak more loudly than anecdotal results.* That said though, we need both as anecdotal stories affect personal motivation whereas hard data affects institutional thinking and appeals to media as much as anecdotal stories – an interesting mix of ‘head’ and ‘heart’ in itself.
- *Engineering looks like magic to non-Engineers.* Just ask your friends and families and you will find they have no real idea of how their phone or water supply works, let alone what keeps planes in the air. Bringing them into our world is ‘wondersome’ stuff to them – even if we feel very ‘matter of fact’ about it. For instance, in my experience in the Indigenous sector, applying very basic precasting to Indigenous housing is having dramatic effects even though the very basic nature of what we’re doing is ‘ho-hum’ to me from a technical viewpoint – see following example. I have no doubt that letting more of our ‘magic’ loose on social issues would produce some very unexpected but positive outcomes.
- *Corporates are concerned to engage their staff and customers in their philanthropic endeavours.* In my experience with Beacon Foundation(which is now a \$2M+ ‘not for profit’, 95% funded by the Private Sector), CEO’s of Corporates considering support to NFP’s are not focused on the dollars but on the impact on staff and customers/clients. This is in itself an indicator of the growth of corporate philanthropy in Australia recently through triple bottom line and CSR mechanisms.
- *Corporate Australia does not want to become a ‘milking cow’ for ‘not for profits’ but rather an agent for capacity building.* With their giving, in either cash or kind, Australian corporates do not

want to build an unhealthy dependence on themselves but rather help ‘not for profits’ (NFP’s) to help themselves towards self sufficiency. This requires a significant mindshift for NFP’s away from the ‘begging bowl’ demeanour required by government funding programs towards self-help. For instance in Beacon’s case, it would be hypocritical to itself become dependent on its sponsors whilst advocating young peoples’ need to not become welfare dependent on the tax-payer. So in this revolution towards corporate philanthropy, there is need for change in attitudes from everyone, including the NFP’s. To do this, I believe NFP’s need a lot of help – from outsiders like Engineers!

- *Life and all its expectations including success and failure is very different for the ‘haves’ than it is for the ‘have nots’.* Two well worn adages come to mind which illustrate this well, I think; viz

‘If at first you don’t succeed then try and try and try again.’

‘If at first you don’t succeed, then failure may be your thing.’

They say very different things about the same event. Those of us who ‘have’ are used to not getting it right first time – we even expect it – and use that to spur our determination to beat it. We usually do beat it – to the point that we expect success and strive to achieve it. However, if you are surrounded by failure and have grown up in that circumstance, then you can’t be blamed for thinking its ‘normal’ and aspire to achieve it. ‘When I grow up I want to be like you, Dad’ is usually cast in a very positive aspirational light but in this circumstance it can be a commit to maintaining generational welfare dependence, for instance.

- *In the world of the ‘haves’, the ‘victim’ often morphs to the ‘culprit’.* This is both very wrong and exceedingly unjust and condemns those who practise it. In my experience though, we can do so without really realising it. For instance, how many of us ‘haves’ display a racist tendency towards Indigenous Australians when we say and think ‘why don’t they just help themselves?’ when confronted by idleness, let alone rampant substance and physical abuse?
- *Notwithstanding what I have said about Engineers propensity to understand causes, in dealing in the social space, I have found that it is sometimes necessary to accept basic things as a given and not try to understand them.* There are exceptions to every rule and I think this is a very important one. For instance, addiction defies logical understanding and is better accepted as a fact so that our efforts can be applied to dealing with it; think about the long-time smokers you know who truly want to give it up but can’t. In my experience, the same goes for long term unemployed people who just can’t get out of bed to go to work. We can tease ourselves with trying to analyse this debilitating handicap or we can accept it and devise ways to overcome it. There is a plethora of such issues permeating the Indigenous sector. Unfortunately life’s challenges are not always so simple.

### **Some Salient Examples – ‘mostly common sense (with the benefit of hindsight!)’**

Firstly, some Beacon Foundation examples which I think demonstrate what I have been saying above;

- Beacon works in the ‘school to work’ transition space, particularly with School Leavers as they prepare to leave their school and not return. It seems obvious to say that they have three choices for their future; viz *continue their studies* or *enter the workforce* or *go on to welfare*. Beacon encourages Leavers to firstly recognise the reality of what’s ahead and helps them to choose either ongoing studies or work, but not welfare. This seems pretty obvious to we ‘haves’ but to a

kid from a welfare dependent background/family/neighbourhood, choice against the norm takes guts, particularly as this is being asked of a child in the process of morphing into an adult – a difficult enough task on its own. The key to all this is in ‘choice’ and not in compulsion or punitive threats. With its flag carrying and well known program, ‘No Dole’ Beacon therefore works to alert kids to the fact that they do have a choice and helps them to contemplate the consequences, both positive and negative, of the three options facing them. Once they make their choice Beacon advocates then helping them to achieve it. When you boil all this down, all it is doing is synthesising the actions of a thoughtful and caring parent.

- Another key to Beacon’s ‘No Dole’ program lies in bringing employers into the school to meet and mingle with the Leavers before they leave with the objective of using their networks to place kids into their chosen space. This can be characterised as the kids then going out the school gate for the last time with employers instead of having to then search for employers.
- For the record, Beacon’s ‘No Dole’ Program is now in almost 100 schools across all states and territories and achieves stellar results with kids ‘at risk’.

Some ‘No Dole’ summary data shows this;

- *Currently in Australia there are around 500,000 people unemployed. Of these over a third, or approximately 172,500, are young people aged between 16 and 24 years. This costs Australia \$4.5 billion a year. The ‘No Dole’ program costs \$150 per child for one year compared to at least \$5,070 pa that is currently spent on supporting a young person in the welfare system.*
- *With the national youth unemployment rate now topping 13% and a huge skills shortage, ‘No Dole’ goes some way to addressing both issues.*
- *In 2008 there are more than 11,000 kids doing the No Dole Program in 96 ‘No Dole’ schools*
- *The retention of ‘No Dole’ students in further education, employment or training 6 months after the completion of Grade 10 is 97.4%, compared with the national average of 83%.*
- *35,000 young Australians have now completed the ‘No Dole’ program.*
- *2,200 businesses are currently involved with Beacon programs.*
- *120 community groups are currently involved with Beacon.*
- Another Beacon Program is ‘Real Jobs’ which seeks to establish a new enterprise which has a primary focus on making sustainable jobs ahead of making money, but not losing money. When this very different criteria is applied, some very different things happen as it moves the goal posts. For instance, as well as teaching the requisite work skills and knowledge, time is available to teach ‘at risk’ kids with no work ethic based role models in their life what it means to work and how they need to behave. The real jobs template is on Beacon’s website - [www.beaconfoundation.net](http://www.beaconfoundation.net) - but in summary is as follows;

#### **Key elements;**

- *Establishment of a new enterprise to spawn real jobs for local, unemployed young people from welfare dependent backgrounds.*
- *The jobs created are to be base level jobs with a future; that is, not ‘dead end’ jobs.*

- *The jobs are to be linked to relevant, accredited, reputable and transportable training; the Australian Traineeship System is ideal.*
- *The enterprise to be created must not compete with another similar established enterprise already employing people and paying taxes.*
- *The enterprise to be created must fit within the local economy and demographic; for instance, in a fishing region, the enterprise could link with the fishing industry in some way. Looking to fill an unfilled need is a suitable approach in the search for the enterprise 'idea'.*
- *The enterprise to be created must not require a large injection of capital upfront. If the new business proves to be successful then such capital investment might sensibly follow at a later stage or phase of the business.*
- *The enterprise needs to be hosted by a suitable local partner in joint venture with Beacon so that, if successful, the local partner is able to continue in the business in the long term after Beacon withdraws after the establishment phase.*
- *The enterprise will need a very special person as the project supervisor who needs to be competent in the field chosen as well as being personally committed to the individual development of the Trainees. In many respects, this person undertakes a dual role akin to being a Probation Officer as well as the workskills Supervisor.*

### **Three things are needed (apart from money);**

- *Project Supervisor*
- *Project Host*
- *Enterprise 'idea'*

In Beacon's experience, these are the three critical success factors in the successful application of the 'Real Jobs' Template. They all need to be well satisfied before proceeding - in the order stipulated; viz find the Supervisor, find the Host and find the Enterprise 'idea'.

- Beacon has now successfully applied the 'Real Jobs' template on 4 occasions with enterprises in aquaculture and building; once in the Indigenous sector – see following. The results are very encouraging and are accessible through Beacon's website – [www.beaconfoundation.net](http://www.beaconfoundation.net).
- I assert that all Beacon's work is based on an 'engineering' approach of first seeking to understand the drivers and then devising ways to control their effects into positive spaces – in Beacon's case, away from welfare dependence towards a life of participation, tax paying, self respect and dignity.

Secondly, a current Indigenous example, the 'Something Concrete' project in Kununurra;

- 'Something Concrete' (SC) is in fact an application of the aforementioned 'Real Jobs' template and is directed at overcoming the twin/related issues of Indigenous Youth Unemployment and Indigenous Housing.
- SC is a joint venture between the Beacon Foundation, the Wunan Foundation and the Shire of Wyndham and East Kimberley, both based in Kununurra. Sinclair Knight Merz is micro-managing the project from both technical and social perspectives on a largely pro-bono basis as part of its support to both Beacon and Indigenous Australians. As with all Beacon projects, SC has been developed with a view to replication, if successful.

- SC is based on applying precasting to the local production of Indigenous housing by employing and training young, local Aboriginal Australians from a welfare dependent background and culture in the manufacture of precast concrete. The project is now entering its third year and the results are very encouraging, in summary;
  - Four houses have now been completed using on-site precasting techniques and are fully occupied.
  - 21 local young Indigenous Australians have undertaken Building and Construction Traineeships and are now in full time employment – paying tax - with either Wunan Constructions or the ‘Something Concrete’ project.
  - A modest precasting factory has been constructed in Kununurra to allow off-site precasting-stage 2 of the SC project
  - Orders are in hand for 15 precast houses for the WA Government for precasting in the new factory ahead of road transport throughout the East Kimberley – the first 5 houses are for Halls Creek.
  - Two small bridges in Kununurra have been precast in the new factory and assembled for the Shire of Wyndham and East Kimberley. Several other bridge prospects in the East Kimberley are being pursued to allow diversification of the SC business.
  - Multiple replication of the SC project is being pursued by Beacon and SKM as a means of making a meaningful contribution to overcoming the major challenges facing Australia in both Indigenous engagement and housing.

More information on the SC project is available at Beacon’s website – [www.beaconfoundation.net](http://www.beaconfoundation.net)

### **Take-away message**

My plea to my fellow Engineers is to get involved in the social space and bring your technical outlook and expertise to bear on the issues facing your chosen entity or field. You may not be expected or even particularly welcome but I encourage you to persist nonetheless and to show by your actions what you can do with a combination of ‘head and heart’.

I often recall recently visiting a good friend and very senior SKM colleague in hospital with an inoperable brain tumour and he rueing to me how he wished he had also applied his intellect and outlook to social issues but that it was now too late. That made me sad and determined to do what I could to help other Engineers avoid that hearth wrenching situation. For me, preparing and presenting this Paper is a part of that commitment.

I encourage all my Engineering colleagues to ponder my plea.

Bill Lawson.

12<sup>th</sup> September 2008.