Global Journal of Engineering Education

Maintaining the corporate asset

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ABSTRACT: The essence of maintenance, in an engineering sense, has been described as *maintaining the value of assets*, meaning, usually, the physical, hardware assets. But in a more general, corporate sense, it can be defined as *maintaining the value of* all *assets*; for example, software and intangibles such as quality and culture, in order to be better than competitors and keep out of trouble with government departments. All those intangibles can open the engineering student's outlook to issues not generally covered in the class-room lecture or tutorial series, so now one can look at some of them, and one issue in particular.

Keywords: Assets, values, personality

INTRODUCTION

This article has been inspired by recognising that physical, tangible, hardware is only part of the overall asset structure and its management. If one takes a complete, company-wide view, there are many more aspects of maintenance, which should get attention in addition to keeping the hardware alive and funds adequate. One aspect, often neglected, is due to the fact that the world outside a company and its employees does not stand still, time marches on, and in order to succeed in upholding an asset's present value management must include not only today's activities but also some measures of updating. And, another aspect is the perception held of the company, externally by that world outside, and internally by the employees, which is affected by what we term the company's *personality*.

Managing a company involves a broad range of occupations, several of whom become involved in maintaining the value of the company's assets, and as examples one can name engineers and accountants. The engineer concentrates on physical, tangible assets, the accountant on their value. But, if we look into those activities, there is a question: what we include under the title of *assets*? Apart from the physical objects and their monetary value, there are other assets, which are intangible, particularly one, to be discussed here.

We will now explore how companies and employees seek, and use, ways to maintain their position, and maintain their *personality*.

WHAT IS MY VALUE TO MYSELF?

First of all, let us consider assets at a personal level, the individual value of oneself, of a person, an employee, an individual, at some level in an organisation, to that person's self. Most of us know some who regard *themselves* as *Number One*, people who want good in life for themselves only, with no thought of what is good for others, no-one else counts. Their personal-asset-value is enormous. Perhaps that is a selfish attitude, but it is quite common, although not many might admit to such a personal philosophy.

However, might one reasonably argue that regarding ones-self as *Number One* is not unreasonably selfish? Indeed, one may well argue in favour of such an attitude, particularly in the workplace, because few around us in our workplaces are prepared to stand up and support another, you and me - unless there is some potential for reward, in which case the person giving support to another would be currying favour in some way. Putting that bluntly in one direction, it is very easy to support the boss, showing he (or she) is *Number One*, in the expectation that the boss will reward the person behaving as a sycophant - that is, a person who supports the boss as *Number One* is usually aiming for the boss to regard him (or her) in some sort of lower *number-one-ish* category.

The result of this reasoning is: those who follow that implicitly are obeying the law of the (corporate) *jungle*. However, it is a rather radical (and cynical?) point of view, contrary to much we are taught, or gather, as we grow up. Many institutions of our society teach us to help each other, and to expect we will receive help from others, in line with the maxim *do unto others as others would do unto you* (to which the comic strip character Hagar-the-Horrible added *but do it first*, suggesting he had negative expectations of others' behaviour). The argument in favour of this radical attitude has been presented by a very few writers, such as Pedler and Boydell [1], who have expressed it quite plainly, and Crosby [2] and Marsh [3], who put it somewhat more obliquely.

So, that is a brief coverage of what is meant by an individual's use of *Number One*. It is self-promoting, makes use of others, and becomes self-protecting.

THE PERSONALITY OF A PERSON

The word used to describe what we see of each other, and how we interpret all that, is *personality*. Used correctly, this refers to the *whole person*, but unfortunately we find it used (that is, *mis*-used) very often in a segmented fashion, looking only at a part of a person. For example, we who are not psychologists and, therefore, less definition-precise may say of a person who is a social success that *he has a lot of personality*, or we may classify a person by some particularly noticeable characteristic (such as having a shy, or eloquent, personality). Worst of all, the loosest use of the word is the description of someone in the entertainment industry as *a personality*.

The search for a precise layman's definition, therefore, presents great difficulty. One prominent psychology writer, G. Allport, is reported to have found fifty definitions of the word [4]. Although he grouped them into five areas, each distinctly labelled, he found no common statement, and produced his own definition:

> *Personality is the dynamic organisation within the individual of those psychological systems which determine his unique adjustments to his environment* [4].

The origin of the word is interesting: it comes from the Latin *per sonare*, *to speak through*, and was used in ancient Rome because actors wore masks to show the role they were acting, and they spoke the part through the mask. Observation of those with whom we work suggests very strongly that most of us (if not all, to be honest) take up roles in our dealings with others, creating a *mask* through which we present ourselves as whatever *person*, we want to appear to be at any one time. Contrawise, the perception taken by those around may be different from what is intended, if the acting is not adequately convincing. (As an illustration of that: in one period of employment this author was astonished to find the trades personnel called him *Captain Bligh*, the perception overcame the intended presentation.)

So now we come to the concept of a *corporate personality*.

THE CORPORATE PERSON

Now to an aspect of corporate management probably unknown by most engineering students, but sufficiently important for students to be made aware of it: it is the personality factor in corporate existence.

A company, a corporation, is generally regarded as a *thing*, something which exists, but only in some ephemeral manner. However, from another point of view, a company, an employing corporation, has some of the qualities of a *person*, and hence, to the company it can, in itself, desire to be *Number One*. This is not as well concealed as an individual's *Number One* attitude. Corporations generally compete vigorously to be among the top of their product or service group, not quite by *the law of the jungle*, kill or be killed, but something approaching it, certainly survival of the fittest. Companies are only restrained from extreme aggression by the bounds of our legal system, by a generally accepted belief that any firm, which gets control of more than one third of a market is ripe for attack, and by our government's dislike of monopolies (unless they are run by the government, of course). These behavioural characteristics fit with the concept of a corporation being *a person*, having a primary interest in self-preservation.

The above argument has reached the stage where some, perhaps many, will ask: how come we regard a corporation as *a person*? If we are going to develop this theme we need support for the concept. We may have heard the expression used, but how did it come about?

It is interesting to look back at the history of how *a corporation* became recognised as *a person*, and it appears to have happened out of a relatively minor taxation case, and curiously indirectly from that. This case, and its many deep ramifications, has been reviewed by Hartmann, used here as reference for the *corporate person* concept [5]. Before that case occurred, there were attempts in America, in the mid-1850s, to bring in such a concept, and in fact Abraham Lincoln used it, when representing a railroad company, but was unsuccessful.

Then in 1869, the United States brought in the Fourteenth Amendment, really intending it to ensure the now-emancipated slaves received full access to all legal due process. But the wording began with *All persons*, and ended with *the equal protection of the laws*, so, in the mid-1860s, when the Santa Clara County in California sued the Southern Pacific Railroad Company for refusing to pay taxes, the Company used the Fourteenth Amendment as part of their defence, claiming the Company as a person, deserved that equal protection.

One quaint feature of the defence was the distinction between two strips of land along the railroad. On one side of the case was the County, which charged taxes on the land occupied by the railroad itself, plus the land on which the surrounding fences stood. On the other side was the Company, which agreed they owned the land under the tracks, but claimed that they did not own the fences and, therefore, should not have to pay tax on that land. They were ultimately successful, apparently, because the County did in fact own the fences.

Another feature, even quainter, is the general belief that the Supreme Court actually decided, in the case of Santa Clara County *versus* Southern Pacific Railroad Company, that corporations were persons under the Fourteenth Amendment, but Hartmann's research showed that was written in as a head-note by a court reporter, and was not given by the judges of the Supreme Court. Nevertheless, for a century and a half, more or less, we have accepted that a corporation is a person, and it seems to go back to that relatively minor case, and to a mere note by a court reporter, even though that was *not* expressed in the judgement. (Ah, the days before direct-recorded transcripts and word processors!)

An American law dictionary, Gills gives a person as: *in law, an individual or incorporated group having certain legal rights and responsibilities*, and states: *A precise definition and delineation of the term [person] has been necessary for purposes of ascertaining those to whom the Fourteenth Amendment of the US Constitution afford its protection, since that Amendment expressly applies to* persons [6],which agrees with Hartmann's finding: An English law dictionary. Stewart only defines a person as: *the object of legal rights*, continuing with: *There are two kinds of legal persons, human beings and artificial persons such as corporations* [7]. However, that reference gives no background for *why* a corporation is a *legal person*.

Maybe in the long run that distinction makes no difference to company management or employment conditions. But it does mean the management (individual persons) of a firm is distinct from the firm itself (a *pseudo-person*). And, if we are to regard a company, a corporation, as a person, then it must have what is termed a *personality*.

THE CORPORATE PERSON ASSET

One's *personality*, the mask we show to those around us, we would fervently hope is an asset. Physical looks may not matter anywhere near as much as this non-physical thing, which comes out in behaviour, expressions, wit, and much else. An individual with a pleasing personality has an advantage in getting ahead of the crowd. So, what should a company have in order to stay *in front*? It is the non-tangible asset, its *corporate personality*.

We come now to defining what this vital asset is, and a definition of *corporate personality* is provided by Olins, who defined the term:

> *The phrases corporate identity, corporate image, corporate personality, visual identity, house style, design scheme and visual programme are all used more or less interchangeably and indiscriminately.*
> *Corporate personality embraces the subject at its most profound level. It is the soul, the persona, the spirit, the culture of the organisation in some way.*
> *A corporate personality is not necessarily something tangible that you can see, feel, or touch – although it may be.*
> *The tangible manifestation of a corporate personality is a corporate identity. It is the identity that projects and reflects the reality of the corporate personality.*
> *A corporate image is what people actually perceive of a corporate personality or a corporate identity* [8].

That lengthy quote has been given to present this author's conclusion that although Olins' book is good reading and provides a wealth of examples, this reader is left with a sensation that even after all the work he put into the writing, and all the work he had performed in his business, he was still uncertain how to express a definition of what he could see in the companies to which he referred. Since his publication (1978), possibly the first on this topic, there has been many other books with the same or similar titles, some of which go into the concept from a legal viewpoint (unfortunately, none available at the time of this writing). Even though Olins seems not to reach a firm conclusion, this author finds the term, and Olins' outlines of this intangible feature, compellingly attractive in the light of employers experienced, many of which provide local illustrations of the factors, which make up appealing and revolting corporate personalities.

However, there is no questioning that such a phantom as *corporate personality* does exist, and Olins' examples cover the certainty very well. The temptation to add a few from personal knowledge is irresistible, so, following Oscar Wilde's philosophy on temptation, here they are.

The illustrations which will be presented can be classed as *anecdotal evidence*, not the *best evidence*, but all we have, and to support their use we point out that Olins has used similar anecdotes, and even the grand master of management writing, Peter Drucker, has done likewise. So, we submit these as illustrative examples.

The starting point for a corporation's personality, when the corporation is established, is the personality of the founder, and to illustrate that take an engineer's short-term employment, during a period some thirty years ago with a firm in a Sydney western suburb.

This company reconditioned drums, 44-gallon, 200-litre, steel containers, and had bought out a smaller firm, which re-refined lubricating oil, located across the road, The engineer's employment was to manage the small refinery, but the employment contract was actually with the former, which had a corporate personality derived, as remarked by Olins, from the founder, the chief executive, who was a driving, profit-conscious, entrepreneurial type. His nature came out in the employment interview, both sides expressed interest in each other in discussion, then, a salary figure was offered. It was too small by a large fraction. The engineer thanked the CEO and his general manager, did not argue about the offer, just politely rejected it and quietly left. A week later, a phone call gave an invitation to resume negotiations, and a week after that there was agreement on a figure considerably higher, in a reasonable range for the job requirements.

During the short time with the company two factors became evident from visits to *headquarters*, the office of the drum reconditioning factory. One was that the equipment was a mixture of odds and ends put together as cheaply as possible, consistent with providing output (it all worked, though mysteriously), the other was there was no plan for improvement, everything was to go on forever as it was. The founder had built all this up from nothing (there was a commonly-known tale that his first office was a telephone booth). Employee's facilities were rather dreadful, and although there was some respect for what he had achieved no-one liked him; a chat with the factory foreman showed he would leave, if he could get another job.

The internally-perceived corporate personality matched that of the founder: maximum results for minimum expenditure, negotiate but only when forced by circumstances, shown in the interview and by the later re-offer. But the engineer shifted to another employer after nine months (and regards that time as his period of gestation as a plant manager).

And the externally-perceived personality? That was also available to this author, who had worked previously with a firm, which purchased reconditioned drums from the firm into which he had now moved, and the impression from the earlier contact was confirmed by the closer experience - simply, that the personality of the drum reconditioning was directed towards maximising profit for the owner, customer satisfaction was regarded lower, and employee conditions were well down the priority list.

The drum reconditioning firm still exists, it was taken over by others, with developments and improvements. Inter-industry gossip related that the original founder had sold out, after his wife left him. The oil re-refining business appears to have disappeared, perhaps forced out by combination of land value and environmental issues; however, other firms are still operating.

From Olins' analysis and the above we believe the corporate personality probably does come initially from the founder, and can, therefore, change after the founder leaves, which is what happened in the above case, but can also be transmitted down into and through the organisation from whoever is appointed at the top, illustrated by this example.

That was observed in the Australian subsidiary of a large international, England-based, company in the early 1970s period, when there was a major change in top management. In the earlier years, before 1970, the company concentrated (in addition to mundane matters such as customer satisfaction and profit) on what might be termed technical excellence, headed by a long-term managing director of the Australian *branch*. Several factories were built and operated successfully. In 1971, the Australian *branch* declared independence from the imperial ruler and changed the local name to show its purely Australian nature. Then, the managing director retired and was replaced by two joint-acting managing directors, a curious and unusual scheme, making many employees puzzled and asking: how can this work? Broadly, one managing director was an engineer, the other an accountant, and before very long the influence of the latter seemed to strengthen. There was a shift towards strict cost control, redundancy payouts were offered, the factory in which this author was an engineer was shut down, he was transferred to another, and redundancy followed. All that seems, in retrospect, to show a change in corporate personality as perceived by employees, coming from the top, though probably initiated and required by economic necessity of the time. However, it is highly likely there was no change in the personality perceived by outsiders, such as customers.

Two commentaries should be added to those two items. First, there is no regrets about either experience or the outcomes, both were valuable in many ways; for example, they provided knowledge useful in later positions and contributed to writing output - not only this present article, but much else besides that. Second, rereading the above brings forth a strong sensation of just how very intangible *corporate personality* is; very clear to the person who was experiencing them, but presenting them lacks anything like equal impact.

AND THE REVERSE?

The above section has focussed on the effect a corporate head can have on the corporate organisation, in forming, establishing, or continuing a corporate personality. Can the reverse occur? Recent events in a major retail company have demonstrated that can occur.

The events, according to what has been in the daily press, began with an employee of David Jones making a complaint about the behaviour of a high-level executive. Within a few days more details appeared. Also, within a very short number of days that executive left the company; we are left uncertain, whether he jumped or was pushed, but what has been printed has a general tone that his departure was assisted.

The company's board has made clear *the company* could not have a senior manager behaving as described. The term *corporate personality* has not appeared in the board's remarks, but there has been enough to show that has been their concern. David Jones presents itself as very up-market, well above the major competitor, perhaps a little lower than the angels represented by Marks and Spencer or Harrods, but with similar notions (and a private brand), infused with an atmosphere to attract women of all ages (and preferably well-funded). The word *common* could never be used in reference to anything in David Jones, but if a very senior manager were found to be propositioning a younger member of the staff - it is very evident that the board had a *corporate personality* image in danger of being damaged, and the possible consequences horrified them.

To an observer, there is something almost amusing in the whole affair, but within the company we see Queen Victoria's reaction to doubtful humour. They were not amused, got rid of the offending person, hushed up what they could, and did everything necessary to restore the personality cultivated by years of public relations hard work. So, to defend the corporate personality, the chief executive had to go. And, the share price barely moved.

MAINTAINING A GOOD PERSONALITY

We should look at this, first, as Olins did, from the viewpoint of the external observers, customers and suppliers. With the latter, for example, there is simple financial matters such as having cash flow adequate to cover all expenses. The other side of that, paying suppliers of goods and services is also important, word about a slow payer can spread through a business segment very easily by anyone who has had to wait over ninety days. For both creditors and debtors, it is important to have a system, which checks and follows up slow payments. As an example, which lacked that is available from this author's background; he worked in the 1960s with a firm which had a company secretary who had a *bottom drawer*, into which invoices trivial-to-her-eyes were consigned and only brought out when the supplier applied pressure. These factors become under control when a firm has a governance system, following from a *good* corporate personality, overseeing such matters, thus avoiding financial sins, whether deadly or otherwise.

Some of the above relates to ethics, a very difficult business area, said, in a business sense to be similar to military intelligence (or, also, in today's climate, political intelligence - or ethics?). Just as common human behaviour is specified by certain well-known rules (for example, the usual ten, although there is more than those) corporate ethics is regulated at least to some extent by statutes and regulations, which, unfortunately, can be shunned just as an individual can ignore those rules.

A situation related to pressure vessel regulations provides an engineering example. In the 1970s, there was a company with a very cavalier attitude to pressure vessels; in the factory, there were many pressure vessels with isolation valves under the relief valves, and there were a couple of large process vessels, about 12,000 litres in capacity, which were regularly pressurised to somewhat between one and two atmospheres to empty out products, even though they were not certified as pressure vessels. The situation persisted for many years. The company's attitude appeared to be: *we've been doing this for years, nothing's gone wrong, so why bother with regulations*? Then, one day a government inspector arrived asking pointed questions and stressing the regulations to a more senior manager, after which the company was instructed to install pumps to discharge the product instead of using pressure. Following completion of that work, there was gossip, contained rather closely within a small group, that a junior engineer had become fed up with the company's attitude, and caused the inspector's visit. No prosecution followed, but the company was watched.

Repetition of accidents is another illustrator of personality-failure. A recent investigation is an example of that shows how such an incident can impact on an organisation's credibility. This author was hired as an expert witness to provide material for defence of a company operating a factory processing agricultural products, in a case of an employed worker who sued the company, after having a hand injured in a machine, which had been inadequately guarded. By the time of inspecting the factory, extra guards had been fitted as directed by Workcover, showing (more than less) that the company admitted the guarding had been inadequate. Then, during investigation of what happened, the escorting foreman demonstrated that removing the guard over the drive V-belts on the same machine was common practice, and although that part of the machine had not caused the injury, that discovery would have given a bad impression to any investigator who was a mechanical engineer. So did observing, on the very day of visiting the factory, that another worker was injured by getting his fingers into a toothed belt drive, after he had removed the guard. The speed with which a Workcover inspector arrived (within a couple of hours, to a location way outside the metropolitan area) gave the impression the company was being watched; so, as well as the direct and indirect costs of the actual accidents, there could be the cost of fines after prosecution. The other indirect cost is standing in the local community, as an employer; in a small country town *the word* gets around.

Those examples show that the perception of a firm's corporate personality in the mind of a government department, and of the local community, can be seriously affected by accidents, or by unsafe working conditions. All the above lack of adequate compliance with good business practices depends on the individual's (or the corporation's) personality.

The above are examples from the recent past; however, a company should also maintain the future (perhaps an odd way of expressing this idea, but it is important) by observing economic trends. The example quoted from early last century was the demise of the firms producing buggy whips, who were pushed out of business by the introduction of the horseless carriage, and a more homely and recent example is the shift from laundry soap to detergent; a soap manufacturer who continued that line would have found sales dropping below survival level. Another has been the introduction of the PVA-based water-soluble paints, have taken the place of the resin-based solvent-thinned paints, which in turn had taken over from the old lead-based paints. Looking after the future requires having a development, think-tank, programme, possibly combined with research, to look at what is happening, what the rest of the world is doing, where events are leading, and what should be done about it. At least to keep up, preferably to get ahead.

David Jones board has obviously been concerned about the future, they have sent out a circular letter to all shareholders (presumably all), referring to what happened as *deeply regrettable* and contrary to the firm's *Code of Ethics and Conduct*. Concluding the man's employment is described as *mutual*, and one would assume that means he agreed with the Board that he should go - but, of course, he could have been given an offer he could not refuse. The content of the letter, through to the second page, which is about the new chief executive, is certainly looking at maintaining DJ's image in the future.

Summing up: there are many ways in which a corporation can exhibit a *bad* personality, and there are, possibly, fewer ways of presenting a *good* personality, apart from avoiding the sins leading to the *bad* type. Can we imagine a firm being seen as *good* by creditors, debtors, employees, the law and government bodies? Achieving that level seems unlikely. Managers can only work towards that desirable state.

RELATIONSHIPS

The relationship between the two *persons* described above, individual employees and the firm, is intricately interwoven. On the one hand, employees at all levels can (and, one may say, should) include extending their position as an asset by learning something new, and can request employer support for training they wish to obtain. From the other viewpoint, companies should (and certainly can) offer training opportunities to employees who demonstrate interest, and also should encourage employees to consider such development activities.

It is somewhat surprising that the Australian Bureau of Statistics has reported such a low figure for training provided by employers. One wonders what this indicates. Employee lack of opportunity or interest? Or employer lack of encouragement?

The other relationship which needs comment is the one between all the above thoughts about aspects of a firm's asset management. The connection is simply that some, or in many ways one could say all, of the above items relate to the integrity of the business, and that must be maintained very carefully, because it is the major asset of a corporation. Integrity is an old-fashioned word for a quite intangible asset, but one which is very real. The recent Opes scandal (and many others in financial circles), which, admittedly was not about a technology-based company, shows how a failure to govern correctly can lead to a situation where no-one has faith in the company, because its integrity has been severely damaged, and it faces serious attack not only by share-holders but also via the legal system.

Two of the above cases illustrate the same loss of integrity in companies using technology; both, the firm which dodged the pressure vessel regulations and the one which had the repeat accident, came under intense scrutiny by government bodies. Even if the inspectors' office is in another city, knowing those watch-dogs are peering over the corporate shoulder is uncomfortable.

One question left hovering in the background is whether people with certain personal personality (deliberate tautology) are attracted to corporations with similar corporate personality? The only observation tending to cover that came from the firm, which changes from technical excellence to financial severity, certainly a number of people who suited (by their similarity) the early corporate personality left the firm, which left a concentration of the others.

CONCLUSIONS

This article began by exploring the notion of aiming high, of trying to be ahead of the pack, of becoming and being *Number One*, in, to begin, one's own assessment of oneself. From thinking about that one can only conclude there is nothing inherently wrong with having such a good opinion of that self-person, with the proviso, now voiced openly, that one's actions must uphold that held belief and not impact illegally or immorally on another person.

The origin of the *corporate person* concept has been explained, then the concept of corporate personality has been defined and explored, with a number of factors which are relevant, if a corporation wishes to be *Number One* in a business community. Similar factors have been presented for individuals. Examples and illustrations have been given for both. The effect of technology has been covered, also with a few examples.

So, if maintaining a *Number One* position is desirable, is it an easy proposition? Well, just expressing a personal opinion, it possibly, even probably, is fairly easy for an *individual-person*, provided that individual has the necessary madness needed to seek another Everest to climb, then to attempt to do it - whatever *it* is, in the immediate context. Progressing further into concluding opinions, it is probably, even almost certainly, more difficult for an organisation such as a corporation (or one such as a political party) because an *organisation-person* is composed of a number of *individual-persons*, who will inevitably have divergent and conflicting needs and objectives, which, in the long term, reduce the organisation's intended concentration of output and success level to some form of chaos.

That is for the past and present. Has there been, through recent years, any changes in the factors mentioned in this article, related to corporate personality? Limited observations suggest that some technology-based organisations have improved their seeking to be *Number One*, although one with which this author is trying to do business appears to be so burdened by its internal bureaucracy and political connection that nothing happens in even a long time. But some of those in the financial sector show tendencies towards lower standards, which suggests they are not maintaining those factors, indeed, one might suggest factors such as ethical behaviour were not there in the first place to be maintained. As for the behaviour of individuals? One may doubt there is any change, the nature of human nature pushes most of us, one way or another, towards looking after self and those immediately close, first.

Finally, is there a relevance to engineering education? Certainly there is, the concept of corporate personality should be given to students through the management and management-related subjects in engineering curricula, then, if an engineer feels uncomfortable in a work situation he or she may be able to understand why. Students at a BE level need to understand that their employing corporation has a personality, and they must live with it if they can. Higher level research students could investigate personality forms, and successes and failures associated with them.

ACKNOWLEDGEMENTS

The author acknowledges the use of many un-named people with whom, and places where, he has worked, who have provided some of the illustrative examples that have been used here.

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BIOGRAPHY

Ronald Bentley Ward entered professional engineering via an Associate Diploma in Mechanical Engineering from the Sydney Technical College following an apprenticeship in an aircraft engine manufacturing factory. He progressed from the diploma to a Bachelor of Engineering at the University of New South Wales (UNSW), Sydney, while working in the chemical industry on projects and maintenance, and during that time completed the Master of Business Administration at Macquarie University, Sydney. In the late 1970s, he worked for consultants, and in 1984 left industry to take a lecturer position at the University of Technology, Sydney (UTS), in the Faculty of Engineering, but specialising in non-technical subjects including management, communication, technological change and risk. The topic of his Doctor of Philosophy thesis (UNSW) led to private consulting work on industrial safety and analysing accidents, in which he still works after retiring from UTS in 2001, and in which area he has written over a hundred reports, in addition to over a hundred journal and conference papers, and several series of management case studies. In addition to that consulting work and writing, he is a company director and a Visiting Fellow at the UNSW.