

The electronic industry - a particular view"

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As you will know, this lecture series is named to honour the memory of Ralph Slade who was a founding member of the N.Z. Electronics Institute and also a founding figure in our industry. He was a man of considerable stature and of kind heart who left his mark of achievement in both the amateur and professional fields.

I was fortunate in that I knew Ralph fairly well. I had not long commenced in business when we first met and I recall warming immediately to his sincere and helpful ad-vice to yet another struggling optimist.

He was a fine man who gave much to the industry, particularly to the professional sector. He perhaps personified, through his efforts with EDAC, the very prototype of a New Zealand endeavour struggling for a recognisable identity in our emerging electronics industry. He was a man of vision and as is often the case a little sadly, a few decades ahead of his time. But he left a high water mark in terms of endeavour and in balance his efforts were not wasted for it seems, historically, that any industry, any field of human endeavour must be prepared to invest heavily at the pioneering stage with its best people.

Minimally, I think, Ralph erected some sign posts identifying the right direction for our industry. That is not a small achievement in the uncertain formative years and I'm sure that Ralph would lie easily in that verdict.

Turning now to our Dunedin environment, it seems a proper gesture that as guests of Otago University, reference should be made to the pioneering work in radio communication and broadcasting done in Dunedin and in the University. Ralph Slade was one of the pioneering figures.

It started in 1902/3 with one J L Passmore transmitting from Flagstaff Hill to Outram and that was just one year after Marconi made it across the Atlantic.

There was sporadic activity up the Great War. The next milestone was the first transmission of music in 1921 by Dr Robert Jack of this University. This was followed by the first regular broadcasts from 4Y0 by Norman Arundel. The 1925 Exhibition gave broadcasting a boost and a station established there carried on to become 4YA.

The amateurs were quietly achieving great things about the same time. Frank Bell, Z4AA, made the first contact with Europe in 1924 as did Ralph Slade, Z4AG, and Lawlor Shiel, Z4AK.

One can smugly say that such events have little relevance to today's technology. I would dispute that since I think if you looked deeply enough you would find that much of that technology has been spawned out of advances made, or financed out of, communications related applications. The communications field is vast - whether it be radio, satellite or telephone. And it goes right back to the early communicators.

The central theme of Nelcon '81 is "The Chip at Work" - most topical for this decade.

I'm a bit out of my depth here of course for I come from the analog world and my roots go right back to "steam" radio. Our comfortable old analog world has of course been

subject of disturbing change in recent years. Not so many years ago there were two highways, one clearly labelled analog and the other digital, along which we progressed. There was a high brick wall between the two - a very proper piece of hardware which ensured a correct view, a bit like the Berlin Wall. Stealthily someone has taken away the wall - in actual fact they have craftily lowered its level and eventually ran it into the ground. Not content with that effort, the highways are now on a converging course. Before long there will only be one highway. That's pretty disturbing for the old people like me - what will they be doing next!

Over the last two or three decades I have watched, and been involved, in the industry and an image has formed in my mind of what it is about. Such images are very personal and become a particular view, not necessarily in phase with other views.

Firstly a look at where the industry is.

When I was invited to present this lecture I had a look at some of the background information of the series. I found that out of the 13 previous lectures, only three were given by electronics industry people and they were all from the Philips organisations - all old colleagues of Ralph Slade. One would be entitled to assume, from that, that our industry is rather inarticulate and/or rather uninterested in matters outside of its walled castle. Hard words perhaps, but maybe not too far from the truth. The castle analogy is not inappropriate for a sizeable section of the industry feels itself under siege, being subject of a Government inspired Industry Study which is shining a hard bright light upon it, illuminating all the warts and imperfections. The discomfort experienced in some quarters is understandable. For many years the consumer section has enjoyed total protection from the outside world - a situation created originally and sustained by Government edict. There is now talk of change and the industry is nervous. It is very easy to emotively espouse one point of view - or the other, but the correct course of action is not easy to identify. Some classes of New Zealand production are clearly non-competitive by inter-national standards. Others not so markedly. To open our market, selectively, to imports will further distort the shape of the industry in diminishing volumes and subsequent higher unit costs. There are several other inter-woven complexities and to resolve the matter justly for all parties will be difficult.

The popular press, and also at the more serious level, has written an awful lot about the electronics industry in recent times. For a while there the chip was almost a weekly topic - starred as a panacea to a wide range of ills. There is still talk of the microprocessor revolution and from some quite responsible people. Heady stuff. I don't see any revolution - but then I don't see too well and I'm a bit deaf too. Certainly there are things being done more compactly and more conveniently than ever before and doubtless some things are more feasible than ever before - in all, excellent prospects. But by my dictionary this is hardly a revolution. The bad thing about this sort of publicity is that a lot of people are persuaded by the repetition, as the propagandists have long known, to quite unachievable prospects and that will do our industry no good.

Apart from the media telling us about our future, there has also been a lot of talking and writing by, shall I say, "professional commentators" - people just on the edge of the industry. The accumulated written material is substantial, but none has come from within the industry. The titles are interesting.

In February 1978, Dr Philip McDermott produced "a case for an Electronics Industry Study" as commissioned by NEDA.

In June 1977 the Department of Trade and Industry published an "Electronics Industry Profile".

Then in August 1979, Professor Harry Whale wrote a report to the Communications Advisory Council - "Professional Electronics in New Zealand".

August 1979 was a prolific month with the DFC in on the act and publishing an "Industry Profile - Professional and Non-Consumer Electronics Industry".

This year has produced two quite substantial works. The DSIR has published a two volume Study and discussion on "Opportunities in the Industry". And Trade and Industry, in conjunction with Treasury and Customs, has brought forth their two volume "Electronics Industry Study".

If sheer weight of words would make it all happen, then our collective future would be iron clad.

What has motivated all this?

And so we see our industry the focus of attention of various agencies, the media, and Central Government. The scene is a bit like the bull ring - industry in the ring, looking both nervous and quizzically expectant, with the inquisitors and the commentators gazing fixedly over the rails. The atmosphere is tense because none of the parties is too sure about what will happen next. There are no precedents - nothing like this has every happened before. Will there ultimately be a thorough culling, or perhaps just a little blood letting?

How about a Trojan Horse, with a timer on its door, led into the ring? Or will all be sweet reason and we all live happily ever afterwards.

I know this much - our industry is in a state of imminent change, perhaps great change. Great stuff if you have the stomach for it - or if it isn't hurting you too much!

The forces of work are substantial and will expend their energy in some visible manner. Consider those forces.

The Industry Study will run its course and recommendations will be made to Government covering both consumer and non-consumer sections. As stated earlier, the consumer section is on the defensive and the non-consumer not too sure - but hopeful for good things.

The growing awareness by the non-consumer section that it has a future, that it is a wanted child, but it must stand up and identify itself.

A willingness by Government, even an eagerness, to assist the wanted child, but cautious in the concern that it may spoil it.

And last, but certainly not least is the great thrust of Government encouragement in export related activities. Most of these forces are external to the industry, but there have recently been some significant moves inside the industry, signs that bode well. Firstly the New Zealand Radio and Television Manufacturers Association changed their name to the New Zealand Electronics Manufacturers Association. No great shakes - what's in a name. Quite so, but it is of course tacit recognition of the wider sphere that it must recognise.

Secondly, and of greater significance, two sub-groups were formed within the Federation, one for Professional Equipment Manufacturers and the other for Component Manufacturers. This was all done with no great fanfare but was the

rewarding outcome of some good work done by an Auckland group. I believe it to be a most important development. A group has come in from out of the cold and the whole industry edges forward toward cohesion and identity.

Cohesion and identity. Some time elapsed after I wrote that phrase and I returned to the assembly of this address, those words suddenly seemed to stand out and say far more than I intended when first written. Those two words seemed to describe succinctly the state of our industry, particularly the professional sector, the state in which it has wallowed for far too long. There has certainly been no cohesion and very little identity.

So where now? There will no doubt be change in the industry - whether it will be great change only time will tell. There are unlikely to be dramatic changes in the shorter term. The nature of the initial changes seem likely to be in the area of tariff/import licencing and the flow on effects may reduce the weight of effort in the consumer section or alternatively may leave the same effort but see it spread over a much wider field, spilling over into the professional sector. The latter is the ideal - live happily ever after solution. Life is generally not like that, but it has been known. To complement this movement in the consumer field is to be the greatly sought leap forward in the non-consumer/professional field. If wishing could make it happen there would be no problems - instant industry. My, how it has been wished for - by Government, by industry, by the commentators.

But of course it will only happen when enough young men are moved "to have a go" and are sufficiently well informed, sufficiently aware where they are going and how to get there. The prospects of success upon success and so a burgeoning industry is clearly dependent upon the number of starters and their individual prospects of finishing. I have no statistics regarding the number of starters but I am certain that the number will grow as the successes grow. That's common enough and so the objective becomes centered on diminishing the failure rate.

A key activity then is do what we can to see that those young men are sufficiently well informed, are sufficiently well aware.

The sort of information needed falls into two clear groups. Basic commercial nuts and bolts, and specific industry oriented information based upon hard won experience.

The former is freely available from many sources and the latter is increasing in availability as the total industry experience grows and people are willing to talk about what they have done and how they did it.

Look now at the prospects of success in the current climate. I believe that they are good and that they will get even better. Consider the reasons.

1. There is a broader field of opportunities than at any time past - made feasible by such a vast range of devices leading to product possibilities unheard of a few years ago.

2. There are funds available for proposals with some reasonable prospect of success and what's more such funds can be on "a heads you win, tails you don't lose" basis. Not quite pennies from heaven but pretty good stuff compared with the past.

3. While nothing is certain it seems very likely that other encouragements will arise from the final out-come of the present Government Industry Study - and they could be substantial.

4. The educational system is bringing forth some people of very good quality - to complement as it were, the fine range of new devices and their possibilities.

5. Realisation of export possibilities brings a new dimension, previously unknown. Not a bad clutch of assistive possibilities.

Consider now the possibilities of failure. Well there are many of them and they exist obviously in every facet of the business - from the simple commercial nuts and bolts at one end, to the clever, high technology at the other end. It can go wrong. But never let that be a reason for not having a go.

It is well recorded that the first 2-3 years are the most testing time. About one in four survives that period.

So let's look at this infant mortality - what does go wrong? Perhaps the easiest way is to examine the things that can go wrong because these are generally the things that do so.

1. Why are you in business - basic philosophy. As Robert Townsend said - if you're not there to make a profit what the hell are you doing there. You may have a number of good reasons, but beyond all else, to make a profit, for if you don't the others won't matter any way.

2. Market research - or do you know if it will sell and how many and to whom? In so many new enterprises this is the stage where hope is about the only input. Sadly, it has no place in cool assessment of prospects, but it is lavished in great lumps. So - if you haven't a reasonably clear picture of your market and your prospects, forget it until you have.

3. Product Development - or putting your act together. This assumes you have done your homework re the market for the best product to bring forth is one that is market inspired.

The development phase is broad and the technical part is only one amongst many. Too often, however is given first and only priority. The others, briefly: component sourcing - how many sources - not just one. Are you into high technology devices, newly on the market - careful! Are sub-contractors secure? Have you fed prototypes back into the market place for assessing and de-bugging? Is it buildable - you have built a few, but can it be built in hundreds, hopefully thousands, with a minimum of sweat? Mechanical engineering. All of this sounds like common sense - and is. How many times is it seen through conscientiously? Sadly, too few.

4. Pricing Structure and Distribution - or do you know you're not giving it away and who will take it off your hands?

It is generally true that most people in the formative years sell themselves too cheaply and are frequently down the river as a result. It's not too hard to work out prices if you have all the facts. Particularly clever designers. If you don't know - go to someone who does.

Distribution - it's full of fish hooks for the beginner. If your product looks like a good one, or even if not, you are very apt to be taken at this phase. Convinced you're not gullible? Get a second opinion on the deal and a third. Besides, can he pay? Get an opinion on that too.

Financial - or where did all the money go? This is a minefield, scattered with the bleaching bones of failed enterprises - old and young, but mostly young. It is a cruel sea, full of hidden rocks upon which young men have launched frail craft with little more than faith in themselves and a burning belief that they will "make it". It has claimed more victims than all the other causes since, irrespective of the initial problem, in the end you run out of money. Fairy God Mothers and rich uncles seem to have fled the land.

The sad thing is that the rules are not very complicated, but so many beginners in business insist on getting it wrong or obtusely decline to get it right. More than any other area of the endeavour, help is essential in money matters. Technically oriented people are generally bored by such affairs or live in crass, cheerful ignorance.

The money planning must start along with the product planning. They are indivisible - one cannot exist without the other. Sooner or later (and generally, sooner) you will need to borrow money - unless you are very fortunate. Your friendly bank manager is probably the first stop and he has the cheapest money. Chances are you have already had dealings with him on a small scale. It now comes as a bit of a shock that he probably doesn't share your enthusiasm for your great work. He thinks about the security of the bank's money and bases his calculations on the gruesome assumption that you have fail-ed and what he can realise on the corpse! Great stuff for keeping you cheerful. Normal banking criteria.

Your success with him will depend on two things. Firstly what you offer as security - house, land, car, etc., and second, but not far behind, what sort of presentation you make to him. Banks bet on assets and the people who own them. Make yourself and your proposal look right. This is where a documented case is essential - where will the money go, what will come in and when and what will go out and when.

Classical cash flow - boring stuff, but the very life blood of business. Anathema possibly to your daily world and if so, get yourself a good aid tolerant accountant. Somebody had better know the way through the minefield, the way round the rocks. Yes, there are other sources of money. The DFC may well take a more sympathetic view of your proposals. Their Applied Technology Programme will provide funds where virtually no-one else will. But in their judgement of you and your affairs they will use very similar rules that the banker uses. So sell *yourself* and your ideas. They don't *have* to lend you money. Do a bit of convincing.

The prospects of early death by neglect of the basics - which is really the nature of those noted points, will be substantially reduced if the basic strategy of your business is well founded.

The following foundation stones noted and amplified.

1. Identify your area - know it through and through - preferably not just one aspect.
2. Tightly limit product range and persevere, persevere, persevere.
3. Avoid diversification.
4. Decide early on if you're solo or partnership.
5. Don't go for great complexity - not at first anyway. It will kill you - problems enough.

6. Try you best for something simple but innovative.
7. Ensure a bread and butter income.
8. Aim for a product that promises volume.
9. If you're getting out of your depth - yell, it's surprising what help you will get.
10. Recognise the importance of the total environment in your business.

And this ladies and gentlemen concludes my "particular view" of the Electronics Industry past, present and future.