Ten years ago, I looked at IT developments through the software that was around at that time and the way in which it was used. The focus was what software would you take with you if you were to be stranded on a desert island? This paper repeats the exercise a decade later and again attempts to anticipate the future. You live dangerously when you make any IT forecasts, but it is nevertheless necessary to do so because we cannot make progress unless we have some long term if tentative plans. We may be wrong, but planning for the future, however difficult, is better than just letting it happen.

We consider the influences - market forces, technological developments - CD-ROMs and the Internet have happened since last time - and attitudes of society, including its attitude to education.

And the conclusion? What will the world be like when you return from your enforced exile? My optimism is laced with a good deal of caution.

Market forces

In 1986, you invited me to contribute to Australian Educational Computing and I wrote a piece of “advice” on what software to buy and did some crystal ball gazing on future software trends. I reread that piece this morning with some trepidation. Making IT forecasts has got me (and many others) into trouble before - was I in for an embarrassment again? Looking at last time’s list of recommendations, it seems not. A decade ago, the software market was still immature and there was confusion around because teachers often could not understand the market forces associated with software production. Today they probably can, but just to make sure, here are a few reminders - a rewrite of ten years ago but in today’s context:

- Unlike books, software costs are more to do with the expense of creation than with production, promotion and dissemination
- This leads software producers to look for economies of scale which can be achieved by writing for a platform which is widely available and directing a product to a large market
- Some producers (eg Microsoft) go to such extremes that sophisticated products are possible because large teams work on them for years. In return, they seek and obtain sales measured in many millions

At one time, a customer with a special requirement could commission someone to write a piece of software for them. This is still an option today, but few contemplate it because of the cost and because they know that they will be disappointed with the result. Bespoke software has to cut corners to be even reasonably priced and usually the quality of the user interface suffers at least by comparison with an off-the-peg alternative.

Educational requirements

In the UK the education scene has changed a good deal since the introduction of the Education Reform Act in 1988. Before then, there was no National Curriculum and schools decided educational priorities for themselves. For IT, this meant that where a school believed that IT was important as a skill to be learned or as a teaching and learning resource, it could also decide to invest a good proportion of its (perhaps slender) time, energy and money in that direction too. Of course it also meant that a school whose priorities lay elsewhere could ignore IT completely but that was happening less and less as everyone came to terms with IT’s significance.

Since the introduction of the National Curriculum however, teachers have been more obliged to do what they are told rather than what they believe in. In the early years of the National Curriculum it seemed that teachers felt more obliged than ever to put IT on the agenda. After all, it had all become respectable - it was there written into the curriculum - which is full of phrases like, “All children must…” - but more recently this sense of urgency seems to have
dissipated despite the imperatives in the National Curriculum and IT has not progressed in some schools.

However, there are reasons to suppose that this lowering of priorities is only temporary. IT’s importance and value has never been greater or more highly regarded and the future looks bright as more and more computer power becomes available with the same price tag. Additionally, pupils are beginning to vote with their own feet so that whereas in 1986 we might have talked about what a school might need if shipwrecked on a desert island, today, we must ask the children. They will not choose software which patronises them, instead they will (rightly) select software which puts power into their hands (ie theirs not their teachers).

**The software**

So what are the requirements for the desert island of today and are they the same as they were in 1986? Broadly, the answer is “yes” but let us look in a bit more detail. Let us see if there is anything we want to add or cut out and let us consider what new opportunities are available today:

**A paint-box program**

Now we think in terms of the sophisticated software available to art departments which is able to control colour shading and levels of resolution which would have only been afforded by the art professionals years ago. With the appropriate scanner or digital camera, images created elsewhere can be captured, as can images from a Photo-CD, and worked on; output in full and realistic colour is affordable.

Not all of us have these kinds of ambitions however but today, we also find that good word-processor packages contain their own embedded drawing tools so that simple illustrations can be added to text without having to leave the word-processing environment.

**A word-processor**

Today’s word-processor, as well as containing simple graphics tools will have desk-top publishing capabilities as well. It will be able to work in a number of columns (not necessarily all the same width) which might change part way down the page. It will have complete control of font sizes and styles which it is able to display correctly on the screen as well as the printer. It will be able to deal with tables and mail-merge.

However, it will also contain tools for the author. Tools which enable outlines to be prepared and filled out, much more sophisticated editing techniques than the old stick-and-paste are likely to be available for allowing sections to be moved around. And of course there are grammar checkers today least in one or two places) so we need not despair.

Apart from the good old spreadsheet, modelling software did not exist - at least at school level - in 1986. Even today, modelling is not seen as an important part of the curriculum. It has been possible to lobby successfully for its inclusion in the UK National Curriculum, but it is not at the heart of learning as it should be. Children model from the day they are born - it is their way of coming to terms with the world they find themselves in. Perhaps it is an important aspect of our mental make-up which characterises us as human. However, in the UK it is not high profile and there are too many who do not understand what modelling really means. Probably, the difficulty that they have is that modelling is so fundamental to our thinking that we are unable to recognise it.

**Spreadsheets**

Devised for creative accounting, today’s spreadsheet provides us with the best opportunity for programming. This piece of software above all others allows teachers to develop an environment which can be given to pupils so that it is still open-ended. Pupils can be provided with a template into which they pour the data from their own experiments or they can be given a simple model - perhaps to build and maintain a population pyramid and can be expected to adapt it by adding complexities as the inadequacies of their current perceptions reveal themselves.

**Database software**

I am disappointed too that we have not made more of the opportunities available for sorting and classifying and for encouraging children to undertake their own investigation. Although no longer popular in school, I still find merit in providing the opportunity to undertake historical research by interrogating census and other records via database software. We start with data and move to
Exploiting software

In the early days, a user could come to terms with a new piece of software in a matter of minutes but today most software has so many options that it almost becomes a life’s work to explore all the options. Of course, most users only need to use part of the facilities provided but the difficulty comes in knowing which aspects need mastering and which can be ignored. It is possible to argue that you need never worry about more advanced features until you need them. The problem with this philosophy however is twofold. First, if you wait until you need the software option before learning to master it, you will always find yourself in a hurry so that you will be tempted to work round it (and resolve to undertake the necessary research at a later date). Also, it is difficult to judge which facilities you need until you have found out about them.

On the desert island, you will have plenty of time, but can isolated users manage without help?

The word-processor is the most abused package in use. Most people do things the wrong way and get away with it - but at a price.

CD-ROMs

A CD-ROM can hold up to 640 megabytes which, if it is used to store text only is enough for a really comprehensive multi-volume encyclopaedia so a few of those should keep you busy! With diagrams, pictures - stills or video, music or any combination of these they are likely to be more entertaining too.

At present, CD-ROMs are expensive despite the low cost of the medium. As the market grows (so far it has grown very rapidly and we can continue to expect this to be the trend), costs will fall and as they do, this will increase the size of the market still further. CD-ROMs are going to become a very cheap way of providing information. Also, they can provide very powerful search facilities. There are drawbacks however. It is not so easy to browse through a CD-ROM like you can with a book so making decisions about what to buy can be difficult. Some CD-ROM publishers provide (free) a sampler disc with information and excerpts from all the discs in a range. However, you have to take the sample as it is - maybe the publisher has just pulled out the most convincing extracts.

In the UK, shops and libraries are not good at providing you with hardware so that you can browse and loans do not seem to be an option at the moment.

Another problem with a CD-ROM is that you cannot immediately tell how much data it contains. Although the maximum capacity is 640 megabytes, they are seldom full and one on my shelf has as little as 10 megabytes. Imagine buying a book with 98% of the pages blank!

For my desert island, I would start by sifting through my own library of CD’s which include:

1. a text based encyclopaedia
2. a less comprehensive illustrated encyclopaedia
3. several specialist reference CDs including an art gallery
4. literature classics reference library (text based)
5. Some of my favourite photographs converted at a modest price by the local photographic shop onto a Photo-CD
6. games for my grandchildren to play. Some are illustrated books which highlight the text as it is read and include animated illustrations and others are stories which are much more interactive where the user becomes one of the characters and is able to influence events
7. an atlas - containing statistical information about the countries of the world as well as maps
8. software - as an alternative to an inconveniently large number of floppy disks.
I might want to add:
9. the last year's daily newspaper - with plenty of time to look for our missed opportunities such a resource would provide scope for looking ahead too.

Communications software
With an Internet subscription, a modem, telephone and a little software you can now be in touch with the world wherever you are - the centre of London or Perth, the Welsh mountains, the outback or on a desert island. Those of us concerned with IT are used to see developer on a desert island. Those of us based in Perth, the Welsh mountains, the outback wherever you are - the centre of London or when you are rescued in ten year's time, what will you find? You can expect to extend our thinking and through that to influence events

Future trends
When you are rescued in ten year's time, what will you find? You can expect to extend our thinking and through that to influence events

As citizens in the 21st century, we will have to ensure that we educate the coming generation with the skills and sense of responsibility which will protect society from its worst excesses. That will be your greatest challenge when you return.