

Driving blind

Antonia J Jones

In the early 1970's when Stafford-Beer made a valiant attempt to rationalise the control of the Chilean economy he was criticised for attempting to 'centralise control'. In fact that was far from the truth, more accurately he was trying to devolve control downwards to the lowest effective level. A lower level that was working would be left alone, and higher levels came into play only when a cry for help was received. Statistics were collected from each level on a daily basis and forwarded for computer based analysis, and hence short term forward prediction. This also facilitated rapid alerting of significant changes, for example in supply and production. In concept it was elegantly simple, but at that time communications infra-structure in Chile was primitive by modern standards and there were hardly any computers in the entire country.

Beer gives a poignant account of an interview with President Allendas, in which he was explaining the idea (of upper levels only becoming locally involved when help was needed) to the President. When Beer got to the very top level he said "And here, Mr. President, is...", he was about to say "you!", but Allendas interrupted and, pointing to the diagram, he said "...the people". In any event, the attempt was seen as subversive by the West and came to an abrupt halt when, egged on by the CIA, the coup d'etat of September 1973 initiated a dark era of repression. Still, Beer's ideas were a far sighted, if doomed, experiment in the application of information technology to the control of a complex system.

We can think of the elected government, personified by the President, as a 'driver', and the people as the passengers who vote on the destination. The driver has the immediate responsibility of control. In the early years of the 21st century we urgently need to re-examine the relationship between democracy, government, information and control. 'Control' often carries unpleasant connotations but, whilst the passengers can decide where the car is going, only the driver can actually take us there, and to do that he needs information. Suppose the driver is restricted to a glimpse through the windscreen every 30 secs. At 30mph he would have to predict the situation up to a quarter of a mile ahead. Unless he slowed down we would very quickly have an accident. Now add in the fact that the car is uncontrollably accelerating and you have a recipe for disaster. This is roughly where the world stands now.

If the driver could see where he was going it would help a lot. Information is the central key and information technology is now in a position to offer real help. Those of us working in the control of complex systems know that you cannot predict or control a system which you are not measuring. Quite simply: real-time monitoring is a pre-requisite of effective prediction and control. So what are we doing about this?

In the UK New Labour came to power espousing Freedom of Information. In reality, since 1997 the proposals have been castrated and only a facade remains. Complex software projects have failed spectacularly at enormous cost, when simple ideas which could make a significant difference have been sidelined. For example, one idea offered by the 'Real-Time Government' group, a loose

alliance of academics seeking to advance the application of information technology in government, is that short-form daily reporting from every arm of civil government could be piggy-backed on conventional email and automatically processed, so that any member of the public with access to the Internet could get instant information about any issue of interest. This could range from queries such as “How many people were in prison at Reading gaol for drug offences at midnight?” to “What is my MP’s voting record over the last 20 votes?” or “What is the estimated rat population of Cardiff?” (for a long time rat population statistics in our cities, vitally important in public health, were classified). Similarly, the right legislation could produce real-time statistics on the evolution of the economy.

A system like this could serve several functions. It could inform government decision making, it could inform the democratic debate, and it could provide the raw data to start building predictive models which might give us some idea of the effects of different policy options.

What has been accomplished in this direction in the last five years? Lots of memos, expressions of interest and meetings, but in reality precisely nothing. So much for New Labour’s forward looking, information technology inspired, revolution. *Their* idea of using email is to facilitate spin, or so it would seem.

Rather than information technology to inform the electorate, to gather useful data that we can all access and discuss, or to monitor government, the emphasis has been unmistakably in the other direction.

The really big growth in information technology has been in monitoring and controlling the people. Not surprising that the people get restive when there is no security in employment, as jobs are exported in the name of globalization, crime rises, pensions are stolen by employers, and local farmers are put out of business, as pesticide infested food is imported over ludicrous distances, all against a background of global degradation and rising global population. It is particularly not surprising when the electorate feel, quite correctly, that the whole system is largely *out of control*, that neither they, nor their self serving elected representatives, who in principle are supposed to be their servants, have a clear idea of what is really going on, or what the effects of any particular policy option are likely to be.

Our current systems for monitoring the economy, pollution, the state of the ecosphere, our river systems, the effectiveness of the health service etc., are exactly like the driver who is only allowed a glimpse through the windscreen every 30 secs and where the accelerator is SuperGlued to the floor. By the time we can see where we are going it is too late to take avoiding action. The fundamental rule is: ‘You cannot predict or control what you do not measure’. The result of not doing so is tremendous waste, as we rush from one fire fighting action to another, corruption that remains undetected, and government that is largely misguided and ineffective.

Yet it need not necessarily be that way. For we have the communications infrastructure and freely available computer technology that Chile lacked in the early 1970’s. In particular we have the Internet.

The beauty of the Internet is that it is, by its very nature, decentralised and beyond the control of any one government or international cartel. Any one of us can have a web page at very modest cost and we can all contribute useful information. As an electorate we can and must demand that essential data about our own economy, environment and public services, is collected and made available to all on a real-time basis. The proposal is nothing less than the long term instrumentation of all these vital factors in our society. Unlike many information technology projects this one has a relatively modest bill and does not involve designing new complicated systems.

The benefits of putting such systems in place would be incalculable. We could focus not on ‘facts’ but on their ‘implications’. ‘Alerting’ is one simple example. Local data processing could automatically flag statistical anomalies, cost over-runs, unusual levels of use of products, unusual levels of deaths etc. If local area Health Authorities had implemented such systems then perhaps someone like Shipman would have been detected before he had done so much damage.

No predictive models of the economy will ever overcome the fact that we live in an uncertain world, where unexpected events can have large effects, but it remains true, for example, that a factory cannot produce more output if it does not buy more raw materials, so some aspects of economic function are very predictable. From the real-time economic data so collected we could start to build new predictive models using new tools in non-linear analysis to quantify their accuracy. Finally, we may be able to help the driver - so that he can at least see where he is going in the short run: a first step in effective control.

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