

Where should Government be directing E-Commerce policy for the manufacturing sector? Stuart Locke from the Waikato University Management School looks at the current state of play implications for New Zealand's potentials.

Manufacturers need a lead not a lead weight.

Manufacturing is continually evolving through technological change. A brief reflection on the progress from water and wind mills through steam and electricity to micro-processors over the last couple of centuries bears testimony to the adaptiveness of manufacturing. Economies that have reaped the gains from technology development are those where government has provided a clear and stable regulatory and institutional environment. For the last 100 years New Zealand has to a greater or lesser extent moved with mainstream western economic trends in this regard. Now as we move into the internet age speed does become the essence. New Zealand cannot afford to fall behind in this game and procrastination will prove not only expensive but potentially fatal for our manufacturing sector's growth possibilities.

Much has been, is being and will undoubtedly continue to be written about electronic commerce. A central issue which is not getting the attention necessary to ensure New Zealand surfs the crest of the wave rather than paddles in its wake, is the development of government policy to provide the platform for success. While there are problems with computer fraud, junk mail etc these must not obscure the total revolution which is coming. Not that long ago you booked a toll call with an operator now there are digital cell phones and satellite phones, providing world wide access, online stock exchange trading and some quite neat games. This change may have taken twenty years but further changes, which the world-wide-web is bringing, will occur with increasingly rapidity.

Government's role in this new knowledge age cannot remain ill-defined. Small countries without the large domestic population growth to self generate growth, such as the US or an integrated Europe, can easily miss the wave and slide back into economic obscurity. In New Zealand it is time for a hands-on approach. While politicians may be so moved it is not an easy transition for bureaucrats if they are to be held accountable for success. To engender a venture-capitalist's thinking of backing the likely winners is what is required.

Treading water or walking on water

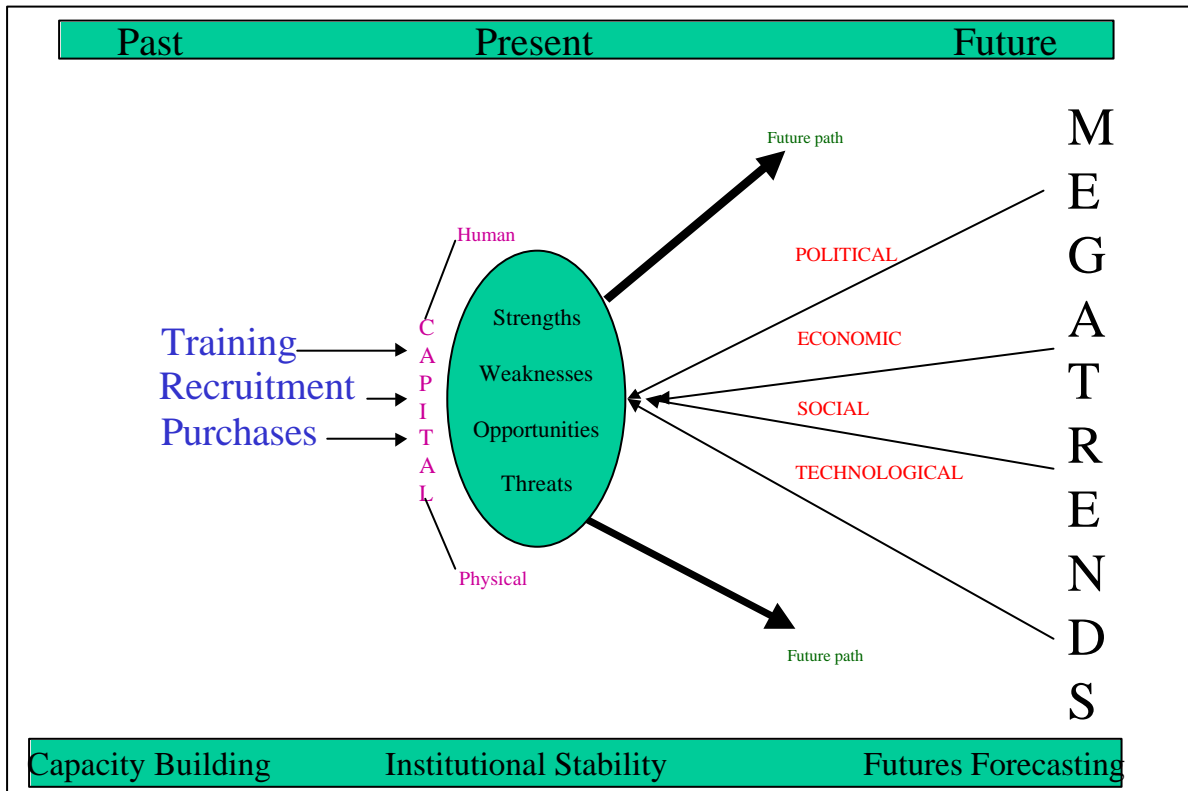
Positioning is all-important and the wait and see or treading water approach is going to be very costly. Strategic paddling is required if we are to catch the e-wave. Successful development and implementation of strategy requires the balancing of two sets of forces. Traditionally, the approach starts from the external, typically looking at the opportunities available, and looks at ways in which a competitive advantage may be generated in addressing these circumstances. An alternative school of thought is to start with the internals and address the issues of what are our base competencies and what can we do with these.

Those who are most profitable find wisdom in balancing both approaches. We need to do the mega-trends analysis, feeding this through such tried and true approaches as PEST and SWOT analysis (Political, Economic, Social and Technological factors, and Strengths, Weaknesses, Opportunities and Threats considerations). We also need to know what our capabilities are in terms of core competencies as these are the platform upon which we may build strategies for change. Past decisions influence our current capability, our view of the most likely future scenario influences the pathway we take, as shown in Figure 1. Government policy impacts on past, present and future.

When it comes to E-commerce we need government policy that provides for:

1. greater levels of future certainty
2. continuing programmes through stable institutional organisations
3. developing competencies that are appropriate to meet the challenges.

Figure 1 The future, the past shape our now



Concrete surfboards

The Ministry of Research, Science and Technology and its associated Foundation of Research, Science and Technology had the opportunity through projects such as Foresight and Bright Futures to really make a difference. It didn't catch the wave so now it is renamed as Industry New Zealand (a sort of hybrid of the 1980's Regional Development Commission and the 1990's Business Development Boards), promising a

national forum on E-commerce (see the Ministry of Economic Development website). While chat groups can be fun, what is needed is the dissemination of something like useful guidance to the business sector is an intellectual hurdle which seems yet to be too high for government to straddle. Similarly, while BusInfo puts the information into the public domain the drive to actually make economic development flow through hands-on directed policy remains an anathema. Concepts such as inland customs-free zones for tax free re-exporting, as being introduced in Australia, or timing concessions and directed assistance for carefully selected areas as in Eire and Finland just can't get off the ground here. (Perhaps if they were underground movements at least some ostriches might notice them.)

Government is acting to police e-fraud. A recent press release of March 24 noted, *New Zealand's Ministry of Consumer Affairs has taken part in the largest ever international crackdown on Internet fraud. The Ministry joined 150 organisations from 28 countries in a sweep of the Internet for bogus get-rich-quick schemes; more than 1,600 sites were found worldwide. "Together with our international partners, we are putting get-rich-quick schemes on notice that we are monitoring the Web," said Ms Bunkle.*

A key area, needing attention, relates to the resolving of intellectual property issues concerning e-ideas and e-images. Our out-of-date copyright law needs change now. The New Zealand Herald's battle to publish the name of a non-convicted and discharged billionaire whose details were suppressed here but published widely internationally is indicative of a problem. If people have the resources to fight such squabbles then they should probably be free to do it but there is a systemic problem that our legal system can create such a farce. Government needs to provide a clear framework of policies for e-business development which are sound and maximise the opportunity for New Zealand to ride the wave of opportunity rather than be dumped. Work is being done on questions concerning property rights and a consultative document to be released will look a lot like what is already in place in Australia. Give Oz an 18 month start and we can't expect to catch up.

Surf or sink

Manufacturing has always been about 'can do' thinking. If we are not on the wave we have either been dumped or a treading water wondering where it went. Recent research results released by the Hon Paul Swain, Minister for Information Technology, indicated that 96% of primary and 99% of secondary schools report some type of connection to the Internet. Commenting on the results the Minister observed, "While there are still some 100 schools in New Zealand to connect to the Internet, the results of this survey are encouraging". He noted that Internet use in schools has almost doubled since the previous survey in 1998 and "This compares extremely well with our UK counterparts where according to a June 1999 survey, only 58% of primary schools and 95% of secondary schools are connected to the Internet."

While the infrastructural capacity is in place the level of e-mail use and web use remains low. The Minister commented that, "Significant numbers of staff in around half of all schools are regular users, but less than 30% of schools have significant use by students".

A business operating like this wouldn't last very long, they would have gone to the wall. Nobody can afford under utilised assets.

Capacity of business?

The availability and usage of computers by small and medium size enterprises (SMEs) was surveyed as part of a SME Performance Benchmarking survey prepared by the University of Waikato's Management Research Centre. (Full results are available on the website at www.mngt.waikato.ac.nz/mrc). There is considerable diversity in the availability of computers in different industries. Manufacturing figures are above retail which was below 50% and lower than the wholesale area which was over 90%, as shown in Table 1. The predominant usage, across all businesses, was related to accounts and word processing.

The use of the computer for internet services was much lower. When the question is asked are they connected to the internet it is apparent there is considerable variation between industries with manufacturing being mid range.

Table 1 SMEs with Computers and Internet Connection

Industry	Have a computer%	Have a computer and are connected to internet %
Manufacturing	81	69
Construction	88	29
Wholesale Trade	92	79
Retail Trade	48	67
Transport and storage	75	33
Finance, property and business services	98	83
Community Services	80	0
Recreation, personal and other services	50	80
Other	92	83

The usage made of internet facilities again varies between industries as apparent in Table 2. Predominant types of usage are at the low end of sophistication, reflecting that the www has become a fax machine replacement for speedy mail and an on-line reference medium. Little use is being made of the internet for business-to-business or business to consumers transactions. These areas are where the E-commerce future lies.

Table 2 Main uses of internet connection

Industry	Inform-ation %	Adver-tising %	Buy-ing %	Sell-ing %	News Group %	E-mail %	Recre-ation %
Manufacturing	44	10	12	10	1	79	6
Construction	30	0	0	0	0	50	0
Wholesale Trade	47	5	11	16	5	79	16
Retail Trade	50	19	17	19	11	72	14
Transport and storage	100	12	100	0	0	100	0
Finance, property and business services	72	0	10	12	12	98	20
Community Services	0	0	0	0	0	0	0
Recreation, personal and other services	0	15	0	0	0	100	0
Other	31	14	4	6	6	94	10

It is also important to consider, as in Table 3, whether there are significant differences between the size of businesses and their usage of the web. There is a stronger showing for the small businesses and many of these may be home based consulting services, which not surprisingly would be relatively more sophisticated in internet usage. A further analysis of home based versus non-home based businesses was also undertaken and this is available on the website of the Management Research Centre of the University of Waikato Management School at www.mnmt.waikato.ac.nz/mrc

Table 3 Employee numbers and internet usage

Staff	Information %	Advertising %	Buying %	Selling %	News Groups %	E-mail %	Recreation %
<5	51	16	9	10	8	83	18
5-9	45	7	10	10	7	90	5
10-14	36	7	14	21	7	86	7
15-19	30	10	20	30	0	80	0
20-50	43	26	13	9	0	83	4

A final consideration, which is fundamental to all policies regarding manufacturing, is the regional disparity in usage. As can be seen in Table 4 there is a marked difference in usage between various regions. It is essential that we don't see e-commerce as a big city issue. Regional centres and country hamlets need to get onto the wave as a means of stimulating growth and prosperity in those communities. Failure to keep up means that there will be a slide in productive potential and markets as others capture these local markets also. The capability of the Telecom lines and exchanges is a growing problem. The recently announced intention of Telecom not to proceed with upgrades of rural lines means the necessary infrastructure for e-commerce in rural areas is going to be greatly diminished.

Table 4 Regional Internet Usage

Region	Internet %	Information %	Advertising %	Buying %	Selling %	News Group %	E-mail %	Recreation %
Northland	67	50	0	6	0	6	81	6
Auckland	80	60	22	9	7	4	87	18
Waikato	77	67	33	33	33	25	97	25
Bay of Plenty	61	26	6	0	6	0	71	6
Wellington	88	50	18	14	14	1	82	14
Canterbury	71	32	0	2	5	0	85	0

Board shorts or bored and left short

The manufacturing sector is patchy in its use of computing. Education is not yet getting our young folk interested, motivated and succeeding in technologically focussed career directions. Government policy needs to be more coordinated and there needs to be some long-term planning, ie not taking the long-term to develop some plans but in the near future get some plans for the longer-term. The current enquiry into FoRST reiterates that the statement of priorities for the FRST clearly identified a need to move from:

"a strong focus on small scale purchasing of outputs, over relatively short time frames, and within a rather rigid framework of rules and procedures"

to

" a strategic far-sighted and proactive strategy for focusing on the achievement of outcomes."

This is consistent with the first two goals of the Foundation as shown in Figure 2.

Figure 2 Foundation of Research, Science and Technology Goals

Goal 1.	Accelerate knowledge creation and the development of human capital, social capital, learning systems and networks in order to enhance New Zealand's capacity to innovate.
Goal 2	Increase the contribution knowledge makes to the creation and value of new and improved products, processes, systems and services in order to enhance the competitiveness of New Zealand enterprises.

Specifically, policy needs to work in three key areas. First, as a nation we need to know where we are heading. There will never be unanimity but we can hope for a reasonable degree of consensus. If we are to be a knowledge economy, then lets get on with it. It requires that we put in place the second key area - educational initiatives ensuring that:

- There is equipment available in schools and other training institutions, ie capital programmes
- There is software available to go with the equipment
- There are trained educators
- All of the above are going in the same direction.

This is to do with building the competency platform for the decades ahead. We are not going to have a short-term fix but rather a series of initiatives that put us to the fore in the technologically based world.

Third, we need manufacturing to be the power-house crew of our waka . This means focusing programmes on areas that are going to be the winners of the future. Carefully targeted initiatives are the way of the future. It is the venture capital game on a macro scale. Government policy needs to change. If we believe in maintaining level playing fields, then they are likely to be our cemeteries.

Writer:

Stuart Locke is Associate Dean, University of Waikato Management School. Through the Management Research Centre at the Management School significant research effort is placed upon manufacturing and other industries. The interfirm financial benchmarking studies and the SME Performance Index are examples.

The University of Waikato offer a Bachelor of E-commerce degree and subject to approval will be offering certificates and diplomas in e-commerce in 2001. See www.ecommerce.ac.nz