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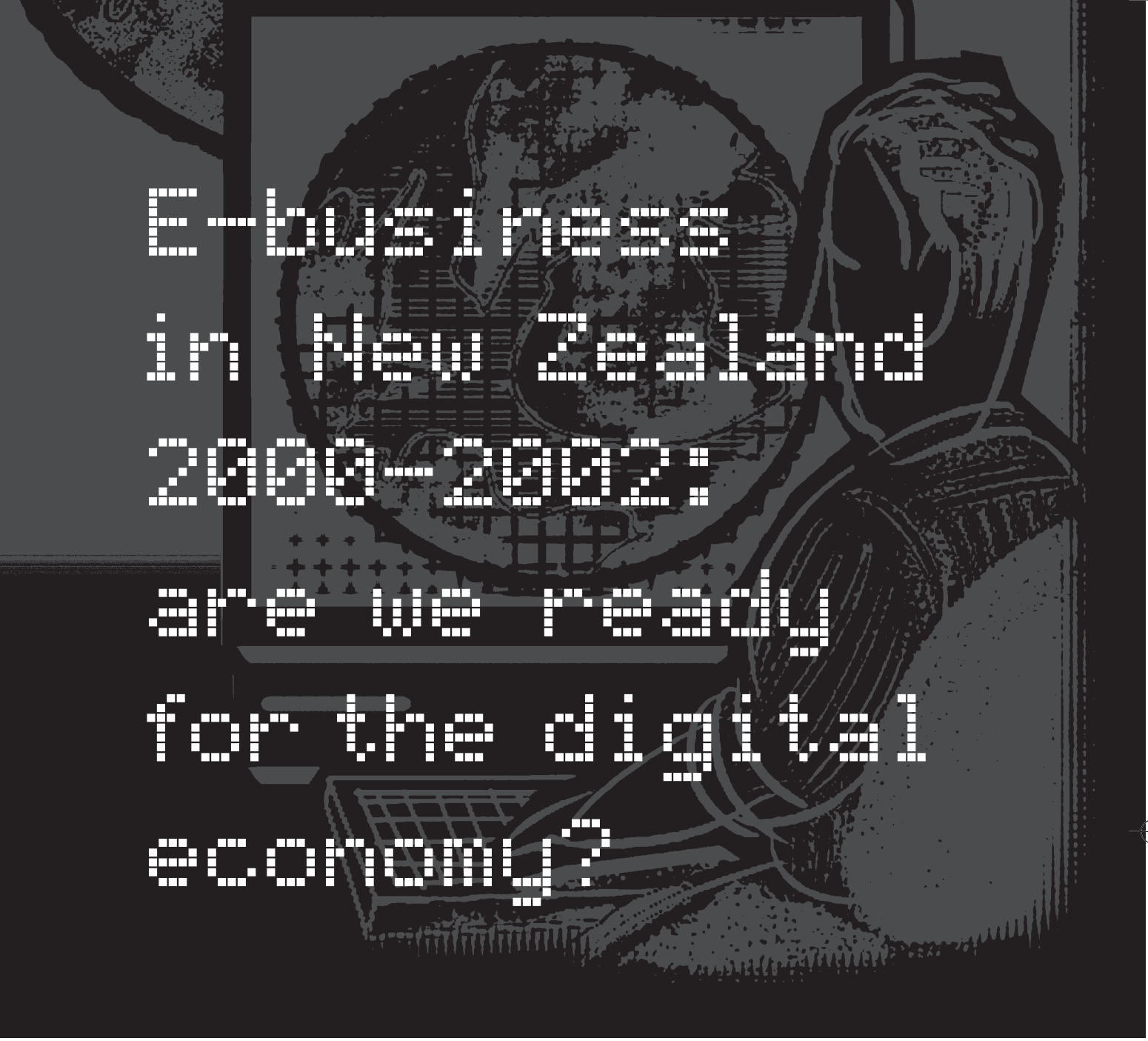
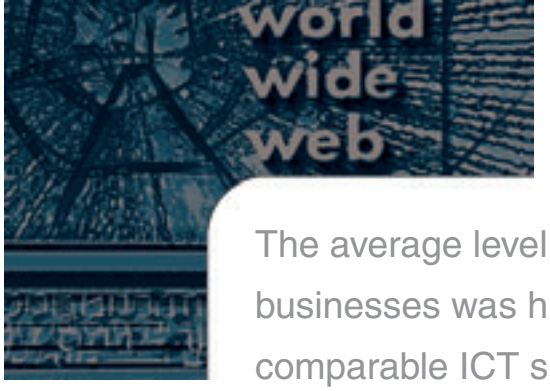


E-business in New Zealand 2000-2002: are we ready for the digital economy?

By Delwyn Clark, Stephen Bowden and Patricia Corner

Moving into the digital economy, information and communication technologies (ICTs) have created opportunities for new types of business models, new market segments and numerous new products/services. Technologies, such as the internet, the worldwide web and e-mail, also provide scope for basic business activities to be web-enabled or conducted electronically. Tapscott (2000) and many other commentators on ICT uptake and utilisation have signalled that ICTs will change the rules of the game in many industries and sectors (Hartman, Sifonis and Kador, 2000; Wetenhall, Sutherland and Boven, 2000). This provides challenges for senior executives, managers, government officials and politicians around the globe. Research to describe and explain the impacts of new technologies on the activities and



The average level of internet access in New Zealand businesses was higher than the averages found in comparable ICT surveys in Australia and Canada

performance of companies and industries, and to develop theories incorporating the new electronic business (e-business) practices, is under way. In addition, initiatives to gauge the level of readiness for an internet-based economy are being conducted to provide information for policy development and decision-making at national, regional and industry levels. In this article, key findings from New Zealand research will be presented to (1) provide an overview of the current status of e-business in New Zealand, and (2) consider readiness of New Zealand companies to compete in the digital economy.

E-BUSINESS IN NEW ZEALAND

The status of e-commerce and e-business activities in New Zealand organisations has been investigated in a series of large-scale, empirical surveys conducted since August 2000 (see **Appendix 1** for methodological details). Key findings selected from these major surveys will be summarised in this article to provide an overview of the current situation in New Zealand. Five specific topics will be outlined and discussed:

1 The uptake of ICTs including computer, internet and website usage.
2 Types of e-business activities.
3 Website capabilities.
4 Impacts of e-business.
5 Inhibitors of e-business.

For clarification purposes, definitions of e-commerce and e-business are provided in **Figure 1**. The more encompassing term, e-business, will be used throughout this article.

FIGURE 1
Definitions of e-commerce and e-business

Electronic commerce refers to all commercial transactions based on the electronic processing and transmission of data, including text, sound and image. This includes electronic data interchange (EDI), EFTPOS, electronic banking, digital cash and other electronic payment systems, but particularly refers to commerce transacted over the internet.

– Ministry of Consumer Affairs (2000). Electronic Commerce and the New Zealand Consumer.

Electronic business refers to the use of electronic technologies to support a wide range of business activities, e.g. communication, marketing, procurement, operations, or distribution. It covers a broader range of processes than trading or "commerce transactions".

– Turban, Lee, King and Chung (2000). Foundations of Electronic Commerce: Electronic Commerce a Managerial Perspective.

1 Computer, internet and website usage

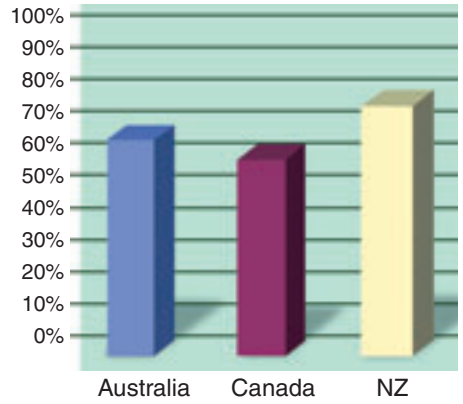
In 2001, computers were used regularly in almost every New Zealand company. The exact proportion of companies using computers increases with firm size, from 86 per cent of small firms (6-19.5 full-time equivalent [FTE] employees) to 99 per cent of large firms (50-plus FTE). The proportion of computer users was also found to vary across different industries, e.g. 99 per cent in finance and accommodation, 86 per cent in retail and 67 per cent in agriculture (Statistics New Zealand, 2002). Four out of five New Zealand companies had access to the internet in 2001. However, Statistics New Zealand (2002) also found higher proportions for larger companies (95 per cent of large companies) and in certain industries, e.g. 99 per cent in accommodation, 94 per cent in property and business services, 93 per cent in finance, 92 per cent in insurance and 89 per cent in education. As shown in **Figure 2**, the average level of internet access in New Zealand businesses was higher than the averages found in comparable ICT surveys in Australia and Canada.

The adoption of websites by New Zealand companies showed the same pattern of results as the other ICTs. In 2002, the average proportions of companies with websites varied from 44 per cent of the smallest companies (0-9 FTE) to 87 per cent of the largest companies (100-plus FTE) (Clark, Bowden and Corner, 2002)[1]. In this major study, *E-business Adoption and Implementation in New*

[1] Different levels were found in each of the major surveys primarily for sampling reasons.

Zealand, the overall New Zealand average increased from 55 per cent in 2001 to 64 per cent in 2002. Industry variation of website proportions for companies, their customers and suppliers, for a series of eight New Zealand industries, is illustrated in **Figure 3** (Clark, 2001). Tourism had the highest levels of website presence (91 per cent), but only two-thirds of their customers and suppliers had websites. At the other extreme, only 24 per cent of the transportation companies had websites, although 44 per cent of their suppliers had websites. This pattern was also noted in most other industries – suppliers had higher website proportions. Apart from business services and transportation, fewer customers had websites than the companies in each industry. Note: the capabilities of websites will be discussed in Section 3.

FIGURE 2
Businesses with internet access

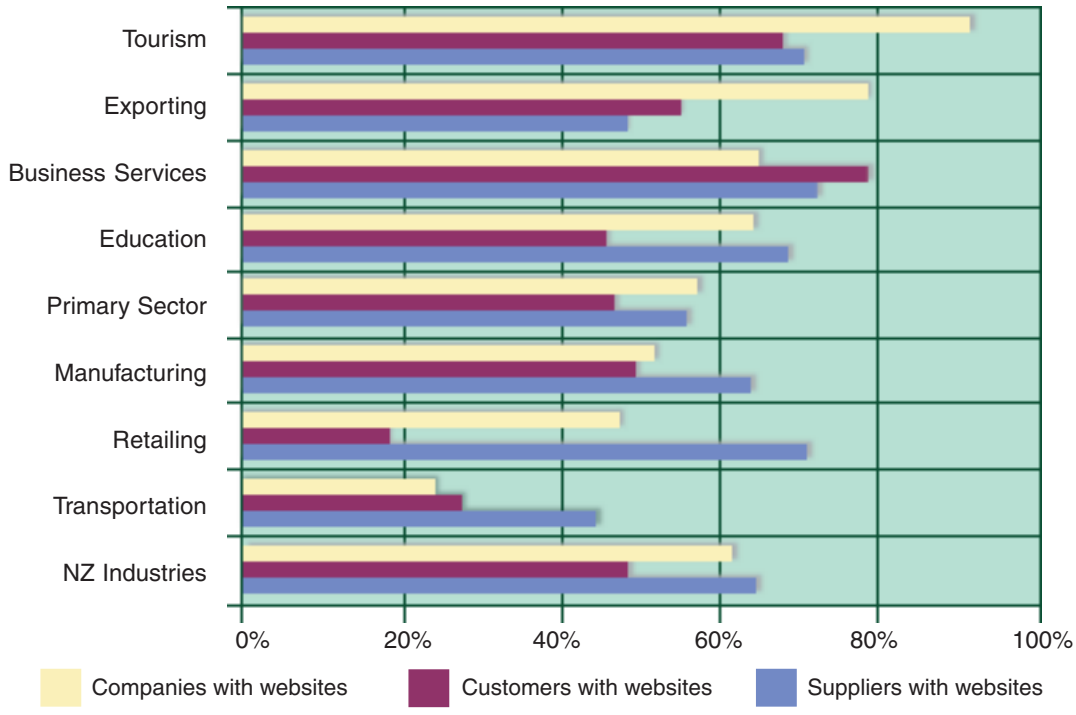


SOURCE: STATISTICS NEW ZEALAND, 2002.

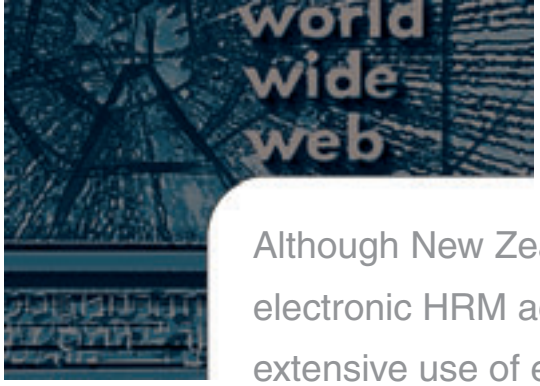
2 E-business activities

A series of e-business activities were investigated to determine levels of participation (do you do this?) and frequencies (how often do you do this?) of these activities in 2002 (Clark, Bowden and Corner, 2002). The proportion of New Zealand companies with computers performing these 18 activities electronically is shown in **Figure 4**. Electronic communication activities including e-mail, sending/receiving files and information searches were the most frequent activities; performed hourly or daily by more than 75 per cent of companies. Approximately half of the organisations were

FIGURE 3 Company, customer and supplier website proportions by industry



SOURCE: CLARK (2001) *NET READINESS IN NEW ZEALAND INDUSTRIES: EMPIRICAL RESULTS, 2001.*



Although New Zealand organisations do not appear to prioritise electronic HRM activities, leading IT companies make extensive use of electronic business-to-employee activities

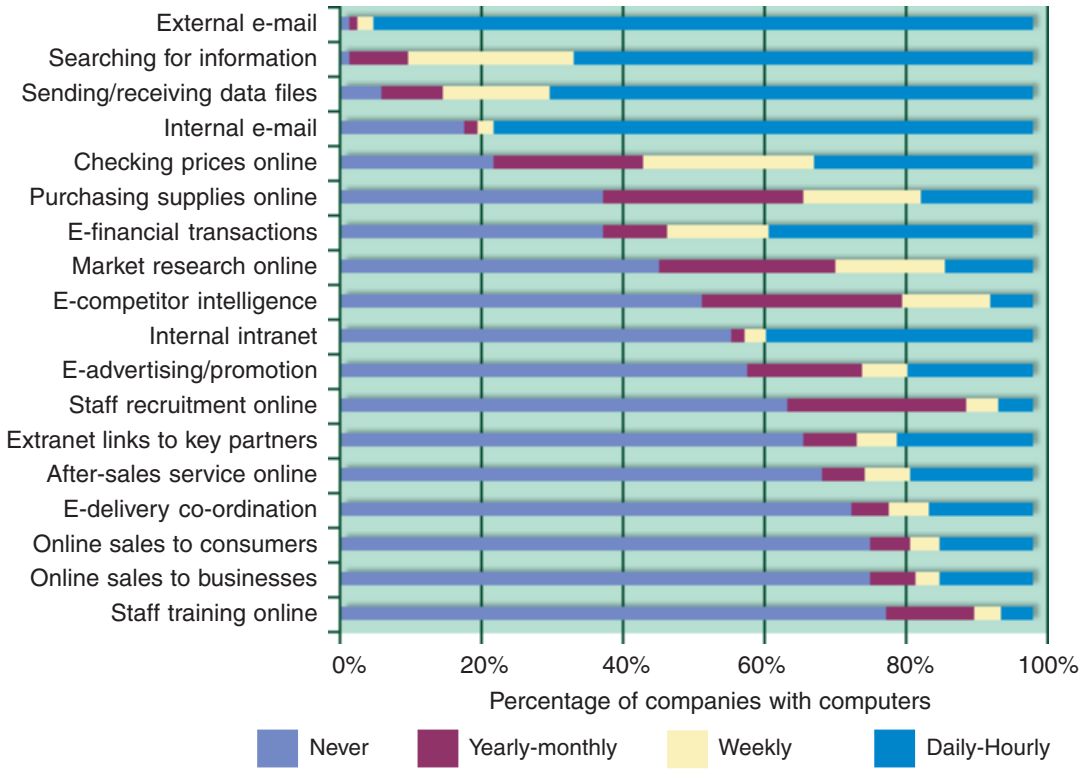
involved with electronic financial transactions on a monthly, weekly or daily basis; including 303 companies doing daily e-transactions.

Similarly, half of the organisations were purchasing supplies online and doing market research online on a monthly, weekly or daily basis. The most frequent category for companies doing these activities, and others such as e-competitor intelligence and e-advertising/promotion, was monthly. Electronic links to partners via an extranet were reported by one-third of the companies and 107 of these companies used these links on a daily basis. After-sales service was provided online by 30 per cent of the computer-using organisations and 26 per cent were doing electronic delivery co-ordination. One-third of the companies were doing electronic recruitment and one in five companies had online training for staff in their HRM activities. Although New Zealand organisations do not appear to prioritise electronic HRM activities, it is interesting to note that leading IT companies, such as Cisco Systems, make extensive use of electronic business-to-employee (B2E) activities. Interestingly, results for business-to-business (B2B) and business-to-consumer (B2C) sales were found to be at comparable levels in New Zealand in 2002. Estimates by Gartner Group, and other international forecasters of ICT activities, signal that, globally, B2B transactions occur on a much larger scale than to B2C. This suggests that considerable scope exists for increased B2B activity in New Zealand.

3 Website capabilities

The functionality of websites determines their

FIGURE 4 Scale of e-business activities in New Zealand, 2002



SOURCE: CLARK, BOWDEN & CORNER (2002).

capabilities for business processes and activities. **Table 1** summarises the aggregate sample proportions for a series of key website features from four of the New Zealand surveys. The most frequent website functions in all four surveys were communication-oriented capabilities to list products and services, provide company information and generic promotion/advertising. In the specialist Electronic Traders survey, these information-sharing activities were core website functions. Also, levels of some of the transaction-processing activities were higher for the Electronic Traders, e.g. receiving payments online (one in four websites) and providing after-sales service (half of their websites). Finding that only one in five websites was capable of providing secure transactions is of some concern. However, three-quarters of New Zealand Electronic Traders reported processing their internet orders manually (ACNielsen, 2001). In conjunction with direct sales from websites, the Electronic Traders used e-mail, phone/fax marketing, physical outlets/retail stores and catalogues/mail orders.

Reflecting the importance of strategic alliances and networks, links to alliance partners were featured on half of the New Zealand websites. But only 58 companies reported links to an electronic trading hub, which indicates that levels of involvement in electronic marketplaces were very low in 2002 (Clark et al., 2002).

4 Impacts of e-business

To identify the impacts of e-business on the activities and performance of New Zealand organisations, a comprehensive series of potential benefits and opportunities were investigated, including financial factors, market positioning, customer services, supplier relationships, communication issues and productivity measures. The 10 most significant impacts of e-business for New Zealand companies in 2001 and 2002 are reported in **Table 2** using mean importance values and top 10 rankings.

Mirroring strategic motivations, five of these key factors focus directly on improving customer service, communications and relationships, and three represent opportunities to expand the scope of the business. Achieving gains from improving efficiency was also recognised by these website companies. "Enhancing company image" was rated as the most important benefit of participation in e-business

TABLE 1 Website capabilities*

FUNCTIONALITY	1 E-BUSINESS IN NZ, 2001	2 E-BUSINESS IN NZ, 2002	3 NET READINESS IN NZ INDUSTRIES, 2001	4 ELECTRONIC TRADERS, 2001
Lists products and services	94.0%	94.2%	96.1%	88%
Provides company data	75.2%	68.4%	62.9%	89%
Provides generic promotions	54.2%	50.3%	60.1%	88%
Links to alliance partners	48.7%	45.6%	51.7%	
Receives customer orders	39.2%	35.2%	42.6%	35%
Provides after-sales support/customer feedback	33.2%	33.5%	38.8%	52%
Provides customised promotions/services	33.0%	31.8%	33.8%	17%
Provides secure transactions	22.8%	20.6%	21.8%	18%
Receives payments online	15.3%	13.4%	14.7%	26%
Maintains account records	12.8%	11.0%	8.4%	11%
Tracks delivery services	12.0%	11.5%	9.3%	
Links to e-trading hub	8.6%	8.6%	14.3%	
Sends bills online (electronic invoicing)	7.7%	6.3%	6.1%	7%

Note: *Aggregate sample proportions of companies with websites from four surveys:
1. Clark et al. (2001). E-business Adoption and Implementation in NZ, 2001.
2. Clark et al. (2002). E-business Adoption and Implementation in NZ, 2002.
3. Clark (2001). Net Readiness in New Zealand Industries.
4. ACNielsen (2001). A Survey of Electronic Traders in New Zealand.

From a policy perspective, it is very important to understand the factors that may act to constrain or inhibit the uptake and implementation of e-business

activities in 2001 and 2002. The top 10 factors were essentially the same in both surveys. The mean importance rating of "removing geographic barriers", however, decreased markedly in 2002. Significant increases were found in 2002 for other efficiency measures (decreasing order-processing costs, reducing internal operating costs), customer services (improving delivery of services) and relationship building (improving relationships with suppliers).

The impact of e-commerce on exporting activities was explored in the BRC Marketing and Social Research 2002 survey. Twenty-seven per cent of exporters reported that "e-commerce was essential" for their export business and another 26 per cent indicated "considerable assistance from e-commerce". However, one in three exporters reported receiving "little assistance from e-commerce". The impact of e-commerce on opportunities to develop and expand the customer base was also investigated in this BRC survey; 63 per cent of the companies rated this "important" or "very important". In comparison, only 34 per cent of businesses rated growing exporting opportunities as "important" or "very important" (BRC, 2002).

5 Inhibitors of e-business

The effective implementation of e-business initiatives is influenced by many organisational and environmental factors. From a policy perspective, it is very important to understand the factors that may act to constrain or inhibit the uptake and implementation of e-business. A series of 30 potential inhibiting factors was evaluated in the E-business Adoption and Implementation surveys in 2001 and 2002. **Table 3** lists the mean importance values of the top 12 factors for two major sub-groups: (1) companies with websites, and (2) companies without websites (Clark et al., 2002).

Although most of the top 12 factors were the same for the website and non-website companies in 2001, the rankings of these factors varied between these two groups. The same pattern was found in the 2002 results. Mean importance values were higher for many of these inhibiting factors for the non-website companies and the differences were found to be statistically significant. Overall, the most important difficulties for the website companies were low customer usage, technological issues and security concerns. The top inhibiting factors for the companies without websites were, however,

TABLE 2 Impacts of e-business: mean importance values*

FACTOR	2001		2002	
	MEAN IMPORTANCE	RANKING	MEAN IMPORTANCE	RANKING
Enhancing company image	3.93	1	3.98	1
Improving information exchange with customers	3.77	2	3.76	2
Faster response to customers	3.64	3	3.49	5
Improving competitive position	3.56	4	3.44	8
Creating new business opportunities	3.56	5	3.37	9
Providing access to new customers	3.55	6	3.50	4
Improving customer service	3.53	7	3.61	3
Increasing efficiency of business processes	3.48	8	3.47	6
Removing geographic barriers	3.48	9	2.44	–
Building customer relationships	3.43	10	3.45	7

Note: *Clark et al. (2002). Companies with websites provided importance ratings for factors on a scale of 1-5, where 1 is very low, 3 is moderate and 5 is very high.

feasibility issues linked to financial returns, market size and resources (specifically time and costs). The role of partners, customers and suppliers in e-business implementation was recognised and the lack of readiness of these groups to do business electronically was perceived by the non-website companies as a major source of difficulties. These findings also indicate that the inhibitors of e-business in New Zealand extend beyond the technological resources required, to incorporate a wide range of internal organisational and external contextual factors.

STATUS OF E-BUSINESS IN NEW ZEALAND

Three major patterns were identified in this research on e-business in New Zealand companies: (1) size matters, (2) industry matters, and (3) what matters differs for the ICT players and ICT observers. The adoption of ICTs was affected by organisational size (measured using FTE employees). This finding reflects both the scale of resources available for investment in new technologies (larger companies have greater access to resources) and the requirements of business processes (much greater scale and capabilities are needed to co-ordinate communication and business processes in a large diversified company than in a small or micro business).

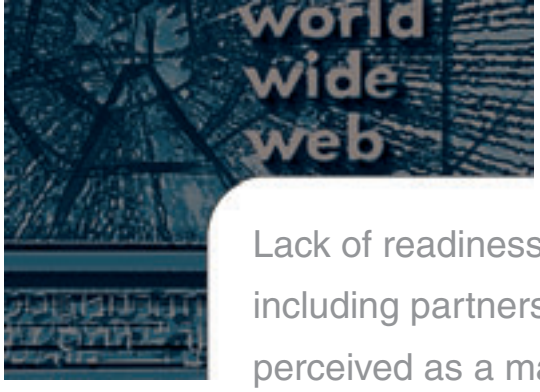
The uptake of ICTs for business activities varies by industry. The nature of the product/service and the core activities in the industry value chain affect the types of activities that can be conducted online or supported with web technologies. Most industries are not offering digital products or selling physical products on the internet. However, ICTs can be used for many other types of business activities such as procurement of supplies, operations, marketing, distribution, communication, or company administration. The key is to identify the areas where improvements in efficiency and effectiveness of business processes can be made with ICT support.

Significant differences were found in perspectives and priorities for the companies that had adopted ICTs (e.g. websites) and those that were still watching/observing the emerging technologies from the sidelines (non-adopters). This finding was linked to assessment of the inhibitors/difficulties for e-business implementation and the measures to improve uptake. The uptake and effectiveness of e-business activities is influenced by many contextual factors beyond an organisation's boundaries and control. For the website companies, the two top inhibitors in 2001 and 2002 were "low customer

TABLE 3 Inhibiting factors: mean importance values*

	Website companies		Non-website companies	
	2001	2002	2001	2002
Low customer use of e-commerce	3.25[1]	3.15[1]	3.14[5]	3.03
High costs of computing and network technology (implementation)	3.00[2]	3.10[2]	2.93	3.21[2]
Limited knowledge of technologies	2.98[3]	2.89[5]	2.89	2.95
Uncertainty of financial benefits	2.89[4]	2.87	3.49[1]	3.19[3]
Concerns about security aspects	2.88[5]	3.01[3]	3.05	3.08
Lack of time to start new projects	2.87	3.00[4]	3.25[3]	3.14[4]
Lack of experienced IT staff	2.85	2.86	3.07	3.05
Limited knowledge of e-business models	2.81	2.59	3.10	2.94
Business partners not ready	2.79	2.69	3.19[4]	2.92
Limited size of target market	2.77	2.77	3.41[2]	3.24[1]
Low supplier use of e-commerce	2.73	2.67	3.11	3.06
Concerns about quality of telecommunications infrastructure	2.70	2.77		
Cannot see benefits yet			3.07	3.12[5]

Note: *Clark et al. (2002). Importance ratings for factors were made on a scale of 1-5, where 1 is very low, 3 is moderate and 5 is very high.



Lack of readiness for e-business by other key players, including partners, customers and suppliers, was perceived as a major difficulty by non-website businesses

use of e-commerce" and the "high costs of computing and network technology". Companies without websites were more concerned with feasibility issues linked to financial returns, market size and resources (specifically time and costs). The lack of readiness for e-business by other key players, including partners, customers and suppliers, was perceived as a major difficulty by the non-website businesses. The most important measures to improve uptake and effectiveness of e-business in New Zealand were improving "telecommunications infrastructure", "consumer access to the internet" and "improved security", according to the companies with websites in 2002. Top priorities for the non-website companies were "improved security", "telecommunications infrastructure" and the provision of "training for e-business".

READINESS FOR THE DIGITAL ECONOMY

Beyond identification of current e-business practices, another approach to assessing "readiness" is to evaluate the areas that are identified as most critical for successful participation in the digital economy. For these types of measurements, specific "scorecards" focus on readiness at various levels of analysis, e.g. national economies or individual businesses. The Asia Pacific Economic Co-operation (APEC) E-Commerce Readiness Assessment Guide (APEC, 2000) was designed for completion at government level. This assessment was developed for use in partnership mode by governments and stakeholders to identify the areas where further development is needed: to develop policies to promote e-commerce or to remove barriers to electronic trade. The assessment includes factors such as the levels of technological infrastructure, internet access, internet usage, IT education, and the regulatory framework for e-commerce.

Another national economy level readiness measure has been developed by the Economist Intelligence Unit (EIU). EIU has a proprietary methodology that it uses to rank 60 countries into four levels of e-business preparedness – e-business leaders, e-business contenders, e-business followers and e-business laggards (EIU, 2001). These E-Readiness rankings are published on the ebusinessforum.com website and are used for evaluating geographic markets and for international benchmarking purposes. EIU employs analysts to combine quantitative data and qualitative assessments by country specialists into six weighted categories for their E-Readiness measure: connectivity (30 per cent), business environment (20 per cent), e-commerce consumer and business adoption (20 per cent), legal and regulatory environment (15 per cent), supporting e-services (10 per cent) and social and cultural infrastructure (five per cent). Assuming successful e-business is not possible without a positive business climate overall, EIU screen 70 indicators for the business environment scores that provide projections for the next five years.

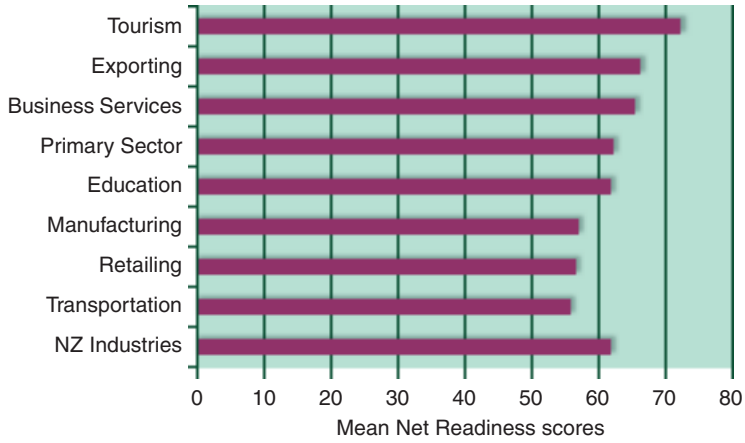
To provide a company-level measure of readiness, Hartman, Sifonis and Kadir (2000) developed a scorecard using a series of factors identified from an in-depth analysis of Cisco Systems and a series of other "net" companies as critical for success of an enterprise in the internet-based economy. Accordingly, this Net Readiness Scorecard evaluates attributes of four main drivers of change: Leadership, Governance, Competencies and Technology. There are two versions of this scorecard: a short version, in which 20 factors are assessed to provide an approximate measure of Net Readiness; and a longer and more detailed version that can be completed electronically at the www.netreadiness.com website. The extended measure is designed to profile the company's current state of Net Readiness, to assess its position relative to others in the same industry (US-based) and to provide prescriptive recommendations to improve its competitive positioning.

NET READINESS IN NEW ZEALAND INDUSTRIES

The short version of the Net Readiness Scorecard was adapted for research on New Zealand companies in a series of different industries (Clark,

2001; 2002). An empirical survey was used to collect evidence of current levels of Net Readiness in eight New Zealand industry sectors with significant roles in the economy and potential influence in shaping the future prosperity of the country (Appendix 1). These included Business Services, Education, Exporting, Primary Sector, Manufacturing, Retail Trade, Transportation, and Tourism. Respondents evaluated their organisation for each factor on a five-point Likert scale. Net Readiness scores were then calculated for each company from their factor ratings and these were averaged to provide the mean Net Readiness values for each industry and the aggregate New Zealand Industries. **Figure 5** shows the mean Net Readiness scores for each industry and the New Zealand aggregate result in 2001. Note: higher scores reflect increased adaptability, responsiveness to change, and capabilities for web-based business operations.

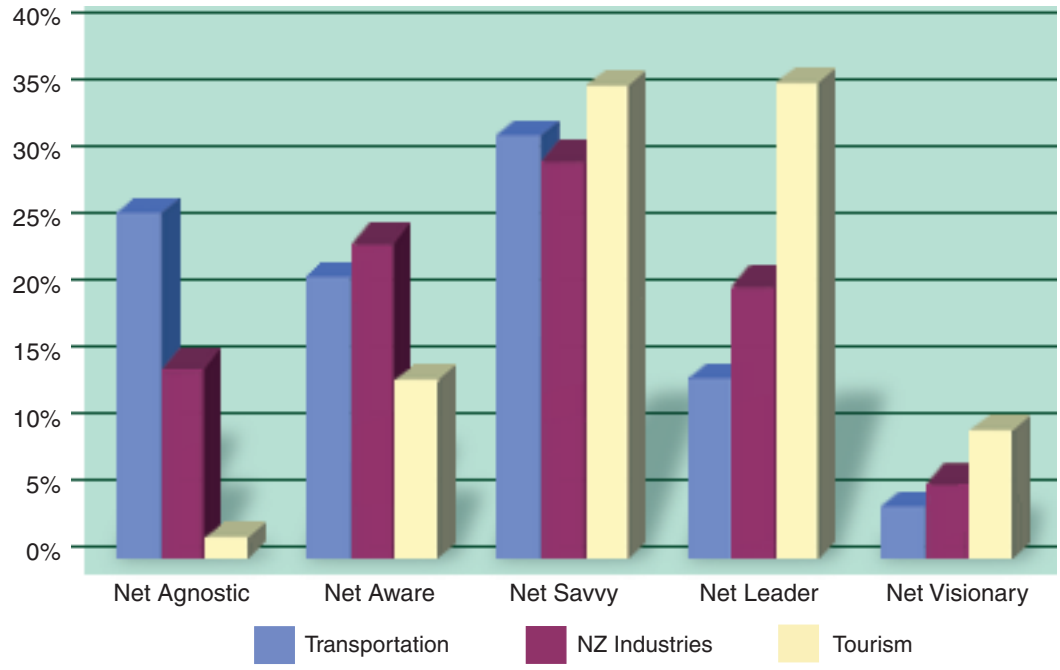
FIGURE 5 Mean Net Readiness scores for each industry



SOURCE: CLARK (2001). *NET READINESS IN NEW ZEALAND INDUSTRIES: EMPIRICAL RESULTS, 2001.*

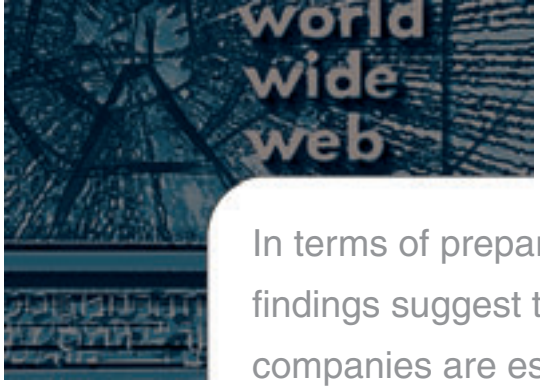
The Tourism industry was the clear leader of all the industries in this study with the highest mean Net Readiness score (73.6). This result is very

FIGURE 6 Net Readiness scorecard distributions*



Note: *Scores of <45 Net Agnostic, 45-59 Net Aware, 60-74 Net Savvy, 75-89 Net Leader, 90+ Net Visionary

SOURCE: CLARK (2001). *NET READINESS IN NEW ZEALAND INDUSTRIES: EMPIRICAL RESULTS, 2001.*



In terms of preparedness for the digital economy, the findings suggest that, on average, New Zealand companies are establishing the capabilities for success

interesting as half of the Tourism companies were small in terms of employees (fewer than 10 FTE) and annual revenues (less than $2 million). The result is not surprising, however, as the levels of ICT uptake in this industry were very high (e.g. 91 per cent of the companies had websites). Exporting and Business Services ranked second and third with Net Readiness means of 67.0 and 66.2 respectively. At the other end of the scale, Manufacturing and Retailing were in sixth and seventh places with very close means of 57.4 and 57.1. The Transportation industry ranked eighth (at the bottom of this list) with a mean Net Readiness score of 56.1.

These overall Net Readiness results are consistent with earlier findings signalling industry-specific factors impacting on ICT uptake and implementation. The nature of the product/service offered and the types of business operations needed to provide those goods and services will influence the types of technology solutions that are applicable and considered for implementation. However, this scorecard also incorporates a wide range of other factors such as leadership, governance mechanisms, skills and responsiveness to change.

Figure 6 presents the overall distribution of Net Readiness scores for Tourism, Transportation and the aggregate New Zealand Industries, using the set of five categories of increasing e-sophistication (**Appendix 2**) developed by Hartman, Sifonis and Kador (2000).

The Net Readiness scores for the aggregate New Zealand Industries resembles a skewed bell-shaped distribution with increasing proportions of companies in the first three Net Readiness categories; the mean Net Readiness score of 63 is at the lower quartile of the Net Savvy range. One-third of the New Zealand companies were Net Savvy, a quarter were Net Aware and one in five were Net Leaders, based upon their aggregate scores. Only 6.4 per cent of the New Zealand companies were in the top Net Visionary category. In terms of preparedness for the digital economy, these findings suggest that, on average, New Zealand companies are moving forward in the right direction – establishing the capabilities for success.

Studying a series of industries enables comparisons to be made within the same environmental context and time frame. The Tourism and Transportation industries illustrate the extremes of Net Readiness found in this New Zealand research. Tourism had 10 per cent of companies in the Net Visionary category and 74 per cent in the combined Net Leader (next highest) and Net Savvy (middle) categories. In the Transportation industry, the largest categories (representing the most companies) were in the middle and lower categories of Net Readiness – Net Savvy (32 per cent), Net Agnostic (27 per cent) and Net Aware (22 per cent). However, it was interesting to find that four per cent of the Transportation companies were in the highest Net Visionary category. Indeed in all of the industries investigated some companies were making significant commitments to develop these capabilities and preparing to incorporate more ICTs into their business activities (becoming "Net Ready").

Readiness for the digital economy has been evaluated empirically in this research project. Although this Net Readiness scorecard was published in 2000, previous studies have been conducted only on contracts for individual companies. Therefore, no public data was available for comparison of these results. External benchmark data would be interesting to put these Net Readiness scores into perspective. In addition, longitudinal data to observe changes over time within the same industry would be particularly useful for corporate strategy and policy development purposes.

CONCLUSION

Key findings from the latest empirical research on e-business in New Zealand companies and Net Readiness in New Zealand industries have been presented in this article. This summary of the current levels of e-business activities is useful for managers to assist with their understanding of the emerging trends in the evolving competitive landscape. In addition, this New Zealand-based research provides "local" data for companies to use for benchmarking purposes. For policy makers, this data is important

to identify and develop appropriate policies and programmes for national, regional and industry economic development. Further, this type of evidence of current business practices is used to assist with international benchmarking of the New Zealand economy.

Finally, the question posed in the title of the article is considered: are we ready for the digital economy? From the evidence collected on New Zealand companies and industries, the answer appears to be an emphatic **yes!** However, both the descriptive statistics from the e-business surveys and the Net Readiness capabilities assessment signal that some New Zealand companies and some New Zealand industries are more ready than others to leverage new technologies in their business processes and activities. Looking forward, the ubiquitous challenge for managers will be to continue to use ICTs effectively and efficiently to improve the performance of their organisations.

ACKNOWLEDGEMENTS

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APPENDIX 1: e-business surveys, 2000-2002

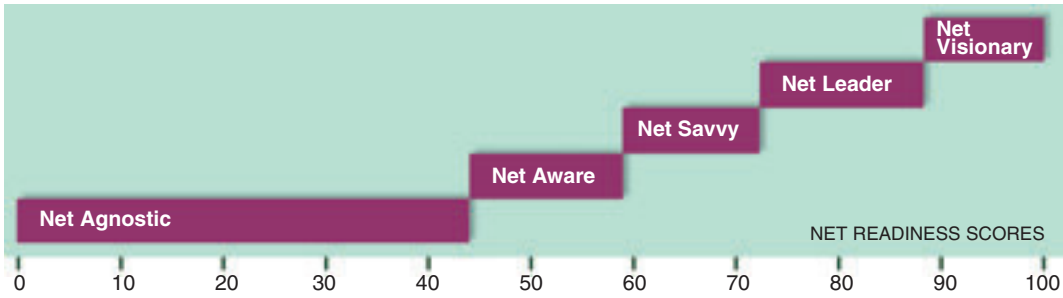
Table 1 lists seven major surveys conducted in New Zealand since July 2000 on the uptake and impacts of information technology, e-commerce and/or e-business. Each survey was designed to collect specific data and achieve specific objectives. As the surveys have different sampling methodologies, terminology and content, most of the major findings are not directly comparable.

TABLE 1 Overview of New Zealand e-business surveys, 2000-2002

	E-Commerce & Internet Use	E-Business Adoption & Implementation, 2001	Business Practices Survey, 2000	Net Readiness in NZ Industries, 2001	Electronic Traders in NZ, 2001	E-Business Adoption & Implementation, 2002	E-Commerce Survey 2002
Code Name	MED-BRC-00	FRST-UOW-0	BPS-STATS-01	MED-NET-01	IRD-MED-01	FRST-UOW-02	MED-BRC-02
Research provider	BRC Marketing & Social Research	Univ of Waikato Mngt School	Statistics NZ	Univ of Waikato Mngt School	ACNielsen	Univ of Waikato Mngt School	BRC Marketing & Social Research
Research sponsor	MED	FRST, UOW	MED, MoRST, Stats NZ	MED	IRD/MED	FRST, UOW	MED
Population	Private-sector enterprises	NZ-based organisations	Private-sector enterprises	Eight industries	Electronic traders	NZ-based organisations	Private-sector businesses
Sampling frame	UBD database	Kompass database	Business Frame Stats NZ	Industry associations	Website co's compiled from multiple sources	Kompass database	Atlantis listbrokers
Respondents	CEO/Managing Dir or IT/Comp. Mgr	CEO, Gen Mgr, Managing Dir, Senior Partner	General Mgrs	Senior Executives	CEO or Gen Mgr	CEO, Gen Mgr, Managing Dir, Senior Partner	CEO/Managing Dir or IT/ Comp. Mgr
Sampling	Stratification (for large companies)	Stratification by size (10+ employees)	Stratification by ANZSIC & size FTE 6+, $30,000 + GST turnover	Random sampling from membership lists (500 each)	Website co's screened for activity & participation	Stratification by size	Stratification by size (FTE 6+)
Survey type	Phone	Mail – 3 phases	Mail – compulsory Stats Act 1975	Mail – 2 phases	Phone screen; mail survey	Mail – 3 phases	Phone
No. questions	21	46	88	34	26	48	26
No. usable responses	506	1229	2756	1034	800	1057	1008
Response rate	61%	20.9%	81.6% (70+ %/stratum)	23.9%	50%	19.2%	48%
Date of data collection	25-30 Aug, 2000	Dec 2000-Feb 2001	Jun 2001	May-Jun 2001	14-29 Jun 2001; Jul 2001	Jan-Mar 2002	Apr-May 2002
Date of report	Sep, 2000	Apr, 2001	Prelim, 30 Jan 2002; IT report, May 2002	Aug 2001	Jul 2001	May 2002	May 2002

Notes: MED Ministry of Economic Development; IRD Inland Revenue Department; UOW University of Waikato. FRST Foundation for Research, Science & Technology; MoRST Ministry of Research, Science & Technology

APPENDIX 2 Net Readiness categories



Net Visionary This enterprise displays best-of-breed Net Readiness. Its e-business initiatives should be flourishing as all essential components (leadership, governance, competencies and technology) are in place.

Net Leader The level of Net Readiness here is impressive, but some important pieces are missing.

Net Savvy This organisation displays a higher-than-average level of awareness of Net Readiness, but many of the foundations are missing.

Net Aware This organisation is aware of the net, but is not net ready. Major work is required to develop the foundations for successful e-business efforts.

Net Agnostic E-business is far from a concern for this organisation. Efforts will likely be fruitless, as understanding of the impact of the net is lacking.

SOURCE: HARTMAN, SIFONIS & KADOR (2000).