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## **ICT STRATEGY: ECONOMIC DEVELOPMENT**

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### **1. Purpose of Report**

The purpose of this paper is to report on the CityLink economic assessment study and advise on options to progress the economic development component of the Information and Communications Technology (ICT) Strategy.

### **2. Executive Summary**

The ICT Strategy seeks to maintain Wellington's position as a leader in ICT in New Zealand. The economic development component of the strategy particularly focuses on how ICT can be used to encourage the growth of Wellington's economy.

Independent advice on ICT provided in a report to the Economy and Arts Committee in August 2004 highlighted the potential of broadband as a means of fostering economic development efforts. Four strategic approaches<sup>1</sup> were identified, as well as a number of initiatives that could be undertaken to further them (see Appendix 1).

In response to the report, the Economy and Arts Committee:

- agreed that broadband should be seen as an "essential infrastructure for Wellington's communities"
- requested that more information be provided on the level of economic development the Council could expect from facilitating the extension of a CityLink-style broadband network to areas outside of the CBD (through assessing the economic impact of CityLink over the past 10 years)
- requested competitive advice on the strategic approaches and initiatives.

An assessment of the economic impact of CityLink has been undertaken. In brief, it concludes that:

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<sup>1</sup> The four strategic approaches were:

- facilitating access to reliable and affordable broadband in non-CBD areas of the City
- providing a business education and information programme that increases the broadband application capability for businesses in the City
- promoting and marketing the City's broadband capability
- positioning the Council as a centre of excellence for ICT, through innovative use of ICT, in partnership with local business.

- CityLink has been beneficial to Wellington's economy, even though it is not possible to quantify the extent of that economic impact
- there is not a strong business case for fully extending broadband beyond Wellington's CBD, because:
  - the non-CBD area does not have the density of demand that made the CBD attractive for investment
  - the broadband market has changed since the mid-1990's
  - other priorities and potentially better investment options are available elsewhere.

Since August 2004 a number of developments have occurred in the broadband field, including the early implementation of the Advanced Research Network by the government (a key initiative in their Digital Strategy) and officers' participation in a regional group (the "Wellington Regional Exchange") which is exploring how broadband roll-out can be accelerated in the Wellington region.

As directed by the Economy and Arts Committee, the next step is to secure contestable advice on the economic development potential of the ICT Strategy, while also drawing on recent developments made by the government and the Wellington Regional Exchange (WRx) group. Specifically, this advice should provide:

- a cost-benefit assessment of the four strategic approaches (including detailed business cases for the potential initiatives, an analysis of their comparative effectiveness and detailed risk assessments)
- a final detailed business case to be developed for inclusion in the 2006/07 Draft Annual Plan deliberations.

### **3. Recommendations**

It is recommended that the Committee:

1. *Receive the information.*
2. *Note that since officers last presented, a number of significant developments have altered the national and regional environment, including:*
  - *the government has begun to implement its Digital Strategy, particularly in calling for tenders for the "Advanced Research Network"*
  - *officers are participating in a regional group focused on accelerating broadband connectivity in the Wellington region. The group will also monitor and work to leverage off the government's work in implementing its Digital Strategy.*
3. *Note that at the request of the Economy and Arts Committee, the study assessing the economic impact of CityLink has been undertaken by the New Zealand Institute of Economic Research. The study concludes that CityLink has had a significant economic impact, but that the conditions generating this success do not exist outside of the CBD.*
4. *Note that a new initiative proposal to fund contestable advice on the ICT Strategy recommended by officers was not supported by the Annual Plan Working Party as a new initiative to be included in the 2005/06 Draft Annual Plan deliberations.*

5. *Agree that officers seek to identify and work through alternative means to develop contestable advice on:*
- *a detailed cost-benefit assessment of the four strategic approaches (including detailed business cases for the potential initiatives, an analysis of their comparative effectiveness and detailed risk assessments); and*
  - *final detailed business cases to be developed for 2006/07, once the Committee has agreed upon its strategic approach*
- and report back to the Strategy and Policy Committee in time to inform the 2006/07 Draft Annual Plan.*

## **4. Background**

The Council has been developing an ICT Strategy to build on and update the InfoCity Strategy it adopted in 1995. The Strategy has three parts to it: looking at how ICT can be used to enhance economic and community development and encourage democratic participation. This report focuses on ICT and Economic Development, with the purpose being to encourage growth in Wellington's economy and support the objectives of the Economic Development Strategy by enabling:

- the attraction, development and retention of talented people and talented jobs
- a wide spectrum of jobs
- workforce development
- business attraction and retention.

In August 2004, the Economy and Arts Committee considered the paper "ICT Strategies and Options to Support Economic Development" (written by Prashanta Mukherjee). The report identified four strategic approaches that the Council could explore to enhance the city's economic growth:

- *facilitating access to reliable and affordable broadband in non-CBD areas of the City*
- *providing a business education and information programme that increases the broadband application capability for businesses in the City*
- *promoting and marketing the City's broadband capability*
- *positioning the Council as a centre of excellence for ICT, through innovative use of ICT, in partnership with local business.*

A number of initiatives that could be undertaken to support each strategy were also identified (see Appendix 1 for details). The most significant initiatives were directed at enabling the Council to facilitate access to reliable and affordable broadband in non-CBD areas, and set out service provider and partnership options that the Council could examine towards achieving this.

In response to the August report, the Committee agreed to the principle that "ICT capacity is essential to our communities' economic, social, environmental and cultural development" and requested officers to:

- assess the economic development impact of CityLink to the Wellington economy over the past 10 years, to provide an understanding of what level of economic development could be expected from a new broadband-based initiative
- obtain contestable expert advice, including a comparative analysis of the strategic approaches and the potential initiatives that could be undertaken to implement them, to determine which would provide the best economic benefit. The Committee also directed officers to ensure a “broad range of strategic partners are involved in the development of possible options”.

## **5. Discussion**

### **5.1 *Developments since August 2004***

Since the Economy and Arts Committee meeting in August 2004, a number of developments focused on enhancing broadband connectivity have been initiated by both central and local government bodies.

#### **5.1.1 The Government’s Digital Strategy**

Advances are being made in implementing the government’s Digital Strategy, although final budgets for the initiatives have not yet been announced. The two most significant developments are:

- the initiation of the Advanced Research Network (ARN). This network will provide a nationwide broadband “backbone” and international high speed, high bandwidth connectivity that universities and research institutions will be able to access
- exploration of the issue of regional connectivity. Although the ARN rollout is targeting universities and research institutions, no specific plans are in place for how these institutions will connect to the network. A possible mechanism for doing this is a “MUSH” network – which can be developed by aggregating the broadband requirements of municipalities, universities, schools and health care providers. The Ministry of Economic Development and economic development agencies throughout New Zealand (including Wellington, Christchurch and Waikato) have been investigating this concept further. The Ministry of Economic Development is also intending to host a series of regional workshops to discuss regional broadband interconnectivity issues.

#### **5.1.2 Wellington Regional Exchange**

Positively Wellington Business (PWB) is coordinating the “Wellington Regional Exchange” (WRx) group which consists of officers from the Wellington, Hutt, Upper Hutt, and Porirua city councils and the Kapiti Coast District Council. The group has been established in response to the government’s ongoing “e-Regions” initiative<sup>2</sup> and one of its main interests is in accelerating the development of regional broadband connectivity and access.

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<sup>2</sup> A follow-up programme to Project PROBE, which aims to “unleash the economic potential of regional clusters and industries via innovative broadband applications and content”

PWB, on behalf of the WRx, is also investigating opportunities to access central government funding to explore opportunities to leverage off the ARN development and extend broadband into the regions, including possible extensions to Wellington City's broadband infrastructure.

## **5.2 Findings on the Assessment of CityLink's Economic Impact**

The Council engaged the New Zealand Institute of Economic Research (NZIER) to assess the economic impact of CityLink and specifically:

- how it has impacted the city since its inception 10 years ago
- whether economic benefits could be expected by facilitating access to reliable and affordable broadband outside of the CBD.

### **5.2.1 Main findings**

#### **(a) CityLink Impact**

NZIER found that it is reasonable to infer that CityLink has had a significant positive economic impact on Wellington's economy and that the return from the project significantly outweighs the Council's financial input into it.<sup>3</sup> The report states that the presence of CityLink has met the Council's original objectives for participating in the initiative as it has:

- accelerated access to broadband in the Wellington CBD
- played an important price mitigating and setting role (i.e. by undercutting prices charged by other telecommunications service providers)
- provided customers with greater flexibility in the services they can access – has enabled services to evolve that would have been restrained by the offerings of the rest of the market.

CityLink has also been able to enhance transaction speeds and enable direct cost reductions through its shared network environment – thereby increasing the productivity and cost savings of user organisations.

NZIER developed a framework for evaluating the economic impact of CityLink which combined:

- a “counterfactual” argument of what would have happened in the absence of the Council's involvement in CityLink; with
- a cost-benefit analysis framework which included the economic and social effects of the infrastructure (for example: its direct client value, social/non-market value, foundation value [potential future benefits], strategic/economic value and its risk).

The framework could not be quantified, however, because of the non-availability of sufficiently detailed data that would enable NZIER to differentiate the specific contribution of CityLink from numerous other indicators of economic outcomes. For

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<sup>3</sup> The Council contributed start-up capital of \$5,000 and in-kind wages and other costs during the first two years of operation (this contribution was never formally quantified, but an indicative figure may be around \$500,000).

example, in the data, “broadband” is just one ICT input within the broader “ICT” category used in industry measurements. The data collected also tends to focus on the contribution of ICT from the perspective of the **production cost** of ICT goods and services rather than its **value creation** (i.e. shows the cost of ICT services to non-ICT firms, rather than the value that can be created through the use of the services).

Without adequate data it is difficult to find hard evidence that CityLink was and/or is a principal factor in attracting or retaining businesses (or other organisations) to Wellington or has had a clear net effect, positive or negative on local employment levels. As such, NZIER has drawn its more “descriptive” style conclusions from the anecdotal evidence it has received from a range of people (chosen for their direct experience of CityLink).

#### **(b) The question of extending broadband access**

NZIER notes that the relationship between broadband and economic development is much debated and that the material on broadband has a tendency to overstate its economic importance. It is difficult to evaluate the impact of broadband on productivity as it is only one of many technologies used by businesses/organisations. Significant factors other than ICT (let alone broadband) influence the economic viability of businesses and organisations and their location decisions – such as the availability and cost of skilled labour and suitable premises, closeness to markets and distribution channels, as well as the intensity of competition in the relevant industry sector.

NZIER concludes that there is no strong economic case to extend broadband beyond the CBD, both for the above reasons and because the specific market conditions that existed when CityLink was established either do not exist outside the CBD or are no longer entirely relevant. They see that the market is evolving rapidly and appears to be becoming increasingly competitive, with increasingly ubiquitous fibre links – at least at the trunk level – outside the CBD.

This is, however, with the recognition that those links might not be to the desired ‘high-speed’ broadband levels set out in the government’s Digital Strategy (which are supported by the Council). However, in NZIER’s opinion, there is not enough information to support generalisations about “mission critical” minimum broadband speeds for businesses and organisations. Although some businesses will benefit in faster data communication speeds, the size of these gains will vary widely across organisations. Most businesses will make trade-offs between speed and data communication costs, just as they do with the delivery of goods and services in general.

NZIER also asserts that:

- the majority of organisations most likely to gain from the presence of CityLink (large private and public sector organisations) are already located within Wellington’s CBD, and thus already have access to CityLink as well as other broadband services
- the organisations most likely to gain from a CityLink style network outside of the CBD (schools, universities and hospitals) will have access to assistance from central government through the Digital Strategy (noting that this is an area that has only recently started to be considered by the government, and no funding has been set aside for it).

### **5.3 Next Steps to Progress the Strategy**

Wellington City has been a leader in broadband connectivity due to the presence of CityLink's "open-access" broadband network. Cities and countries around the world are now catching up and passing Wellington, as central and local governments are funding and supporting initiatives to increase broadband connectivity.<sup>4</sup>

In New Zealand, broadband connectivity in the regions is becoming an increasingly important question. The Hutt, Upper Hutt and Porirua city councils have seen the competitive edge Wellington has due to CityLink, and have established "SmartLinx3" to look into building a broadband network in these cities. Manakau City is also considering how it can provide broadband connectivity across its city, as are the Christchurch, Hamilton and Palmerston North city councils (and the regions' respective economic development agencies).

Officers will continue to explore regional broadband connectivity options with the WRx group as well as continue to monitor the government's progress in implementing its strategy (and try and leverage off its initiatives).

The work the Council has undertaken to date has provided a good early foundation for understanding where the Council should go with the economic development component of its ICT Strategy – for example, the advice from NZIER's economic impact assessment has tempered the original advice the Council received by recommending caution in the extent of the Council's involvement in the provision of infrastructure.

Investment in ICT technology is potentially high risk and high cost, and the contestable advice requested by the Economy and Arts Committee is critical for officers to be confident about advising the Council on initiatives. This further work needs to be undertaken, within the context of the new national and regional developments, to provide:

- a cost-benefit assessment of the four strategic approaches, including:
  - detailed business cases for the potential initiatives (including an initiative around establishing a "MUSH" network)
  - an analysis of the comparative effectiveness of the strategic approaches and initiatives in encouraging economic growth
  - detailed risk assessments
- the preparation of detailed business cases to be developed for inclusion in the 2006/07 Draft Annual Plan deliberations, once the Committee has agreed upon its strategic approach.

Such work ideally needs to be undertaken by a person/organisation that can combine expert ICT knowledge and strong strategic analysis skills with a sound understanding of the economics of ICT infrastructure. As such a combination of knowledge and skills is not readily available, it consequently comes at a high cost. For this reason, officers recommended that \$100,000 opex funding is placed in the 2005/06 Draft Annual Plan to purchase the advice required. As the Annual Plan Working Party

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<sup>4</sup> South Korea, Hong Kong and Taiwan, in particular, have made significant progress in increasing their broadband connectivity, as have Canada, Sweden and Denmark. Other countries and cities are set to follow (the United Kingdom, Greece and Ireland).

rejected this new initiative for inclusion in the Draft Annual Plan deliberations, officers will explore alternative mechanisms for developing this advice.

## **6. Conclusion**

Given the developments that have occurred since the Economy and Arts Committee considered the economic development component of the ICT Strategy in August last year, officers recommend that further progress on the strategy is made by officers to:

- continue to participate in the WRx group, which will also monitor the government's implementation of its Digital Strategy and seek to leverage off the development of the ARN
- explore options for obtaining the contestable advice requested by the Economy and Arts Committee, which will include a detailed cost-benefit assessment of the four strategy approaches and detailed business cases of the initiatives.

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## Supporting Information

### 1) Strategic Fit / Strategic Outcome

*The economic development portion of the ICT Strategy is aligned to the Council's strategic goals around:*

- *Talent: attracting talented people and innovative businesses to the region*
- *Smart Growth: planning ahead, so that as the city grows it continues to offer the natural beauty, quality of life and unique character that make people want to live here*
- *Creative Edge: maintaining Wellington's reputation as the national centre of arts, culture, film and television industries.*

*This portion strategy particularly supports the City Economy Key Achievement Area and the strategic outcomes of:*

*4.1 Ideal location*

*4.3 Premier centre (particularly the reference to Wellington as a knowledge centre)*

*4.4 Diverse and competitive economy.*

### 2) LTCCP/Annual Plan reference and long term financial impact

*New initiative opex funding of \$100,000 is being requested for the 2005/06 financial year. This budget will be used to purchase expert advice that will help determine the strategic approaches and initiatives the Council should undertake.*

### 3) Treaty of Waitangi considerations

*N/A*

### 4) Decision-Making

*This report does not require the Committee to make a "significant" decision.*

### 5) Consultation

#### a) General Consultation

*General public consultation will be undertaken on the full ICT Strategy once the draft ICT Strategy has been approved by the Strategy and Policy Committee for consultation purposes.*

#### b) Consultation with Maori

*Mana whenua and the wider Maori community have not yet been consulted on this part of the ICT Strategy.*

### 6) Legal Implications

*Currently there are no legal implications.*

### 7) Consistency with existing policy

*The ICT Strategy will provide the Council with a strategy to replace the InfoCity Strategy adopted by the Council in 1995. The ICT Strategy will be consistent with other current Council policies.*

## Appendix 1

<b>Strategy</b>	<b>New Initiative Options</b>
<i>Strategy 1: Facilitate reliable and affordable broadband</i>	<ol style="list-style-type: none"> <li>1. Investing in Council-owned duct for fibre optic cable</li> <li>2. Partnering with the Smartlinx3 project</li> <li>3. Supporting an expansion of CityLink either through a grant or investment</li> <li>4. Developing a broadband building guideline</li> </ol>
<i>Strategy 2: Provide a business education and information programme</i>	<ol style="list-style-type: none"> <li>5. Developing a broadband seminar programme</li> <li>6. Mapping the available fibre optic cable conduits in the city</li> <li>7. Establishing a broadband demonstration/information suite</li> </ol>
<i>Strategy 3: Promote and market the City's broadband capability</i>	<ol style="list-style-type: none"> <li>8. Providing "Positively Wellington Net-ready Cafes"</li> <li>9. Providing an e-Democracy showcase</li> </ol>
<i>Strategy 4: Position the Council as a centre of excellence for ICT</i>	<ol style="list-style-type: none"> <li>10. Enabling business through the smart presentation of information</li> <li>11. Developing a technology park concept in Tawa.</li> </ol>
<i>Implementation of the Strategy</i>	<ol style="list-style-type: none"> <li>12. Appointment of an ICT/Broadband Champion</li> </ol>