City Benchmarking:

A Technical Report

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Summary of Key Points

Benchmarking is a process that measures performance using specific indicators that are comparable across different entities – in this case, cities. The international benchmarking of cities can provide useful metrics and indicators for local and central government policy development and decision-making. Benchmarking studies allow policy makers to identify aspects of a city in which improvement can be made, facilitate comparisons between cities and assist policy makers to monitor the performance of their city over time. In addition, international benchmarking studies can be used to develop and promote a city's image and thus attract tourists and new residents, including highly skilled mobile professionals who are integral to the growth of contemporary cities.

Although attracting mobile skilled labour is important, it is also critical to account for the perspective of a city's current residents. A city's inhabitants and its policy makers have a rich understanding of how their city functions and operates, including an indigenous knowledge set. Gaps in the knowledge base can be readily identified by local policy makers and it is at this level that indicators and measures should be conceptualised and developed. The New Zealand 'Quality of Life' project, for example, harnesses rich local knowledge and provides an appropriate indicator framework that facilitates comparisons between Auckland and other cities. In addition, Auckland Council is currently developing its own definition of liveability and a set of measures to enable progress to be monitored over time.

There are a number of benchmarking studies that measure various aspects of city performance and functioning. In this technical report, we use Taylor's (2011) typology as a useful way of understanding the different approaches. These are:

1. Business cost-oriented studies,
2. Liveability-oriented studies,
3. Performance-oriented studies and
4. Sectoral studies.

It is increasingly recognised, however, that city comparisons are complex and that the processes and systems within a city require significantly more analysis than that which can be captured in a single headline indicator. Critics of benchmarking argue that a 'one-size-fits-all' methodology is inappropriate because it does not take into account the distinct elements of individual cities. They claim that the method is too simplistic to establish the desirability of a city for those looking to relocate, reside or establish and operate a business. There are also a number of methodological complexities and limitations involved in benchmarking studies, including the following:

- The availability of consistent datasets across cities. For example, datasets used as evidence for the same component may differ from city to city, even if they all measure similar factors;

- The development of composite indicators that obscure the complex processes operating beneath them. The validity and relevance of composite indicators is limited because their component measures have lost their separate meaning through aggregation. In addition, the components are weighted subjectively and reflect the preferences of a specific audience;

- The use of singular attributes that do not reveal anything about the flows, connections and linkages of goods, services, ideas, money or other intangibles between cities, all of which contribute significantly to the success or otherwise of contemporary cities;

- Volatility in exchange rates can affect price structures in comparisons of costs across different cities. Similarly, the way that inflation is incorporated may affect overall rankings;

- Data comparability can also be affected by large differences in the geographic size of cities;

- The details of inequalities and differences across cities are lost in benchmarking studies;

- Aspects of a city such as its history, politics, communities, people and environment are unique and thus not captured in benchmarking studies;

- The indexing of cities shows their relative rank. Very small changes, for example in the weights used or in the ranking of another city, can impact the ranking order significantly even though the city itself may not have changed;

- Liveability-oriented studies such as Mercer Consulting's 'Quality of Living Survey' and the Economist Intelligence Unit's 'Quality of Life Ranking' examine quality of life for expatriate employees rather than the quality of life of a city's own residents.

It is therefore critical to consider the following issues when assessing the relevance and validity of benchmarking studies: comparison by whom, for what audience and for what motives. In addition, a thorough understanding of the datasets underpinning each index is required, including how categories and factors are chosen and weighted, as these can significantly change the outcome of the study. This technical report, together with the Liveability Framework and Chapter 13 of the Auckland Plan comprise a first step towards addressing these issues for Auckland.

City Benchmarking

The aim of this technical report is to investigate the range of international studies that include Auckland in their ranking of cities around the world.

International benchmarking surveys can provide useful metrics and indicators for local and central government decision-making. These processes of decision-making are predicated on a set of desirable outcomes which in turn are based on appropriate data and information on how those outcomes can be reached. Measurement remains the basis for policy makers' decision support tools, and a pragmatic approach to measurement is required, including availability and affordability of data. Some benchmarking top-line figures relating to Auckland are readily available free of charge from the internet. However, their use can result in oversimplified interpretations of how a particular city compares to others as well as the ways in which it changes over time. To paraphrase Aaron Levin, 'Statistics are like a bikini. What they reveal is suggestive, but what they conceal is vital'.

This technical report explores some of the key issues that arise in the interpretation and use of benchmarking studies. It describes and evaluates the most commonly used international benchmarking surveys that include Auckland, highlighting the advantages and disadvantages of different studies. The methodologies used in respective studies are not examined in detail, however, the methods behind each are reviewed and some generalisations regarding overall benchmarking processes are made. To organise the array of benchmarking studies, four approaches are presented, including: business cost studies; liveability studies; performance studies; and sectoral studies. A useful checklist for evaluating the benchmarking studies is presented. The report concludes with a summary of the benefits and limitations of benchmarking studies.

What Is City Benchmarking?

Benchmarking is a process that measures performance using specific indicators that are comparable across different entities – in this case, cities. With its origins in company management and industry performance, city benchmarking is increasingly being used by policy makers to compare the performance of cities and regions. This represents an interesting change from understanding cities as locations in which competitive forces operate to viewing them as competitive places in and of themselves. A city's image is important because it affects its desirability as a tourist destination and as a choice of residence. Moreover, image is also a key part of attracting internationally mobile skilled professionals into a city's labour force. The image of a city can emphasise the unique characteristics of that city-region: its history; its natural environment; its people and its less tangible characteristics such as its social and political institutions.

The process of benchmarking involves the ranking of cities on a scale - a hierarchical ordering that leads us to view cities as 'better' or 'worse' than each other, according to measured criteria. Proponents of benchmarking exercises argue that it is an essential prerequisite for informed and strategic policy-making[1] because it allows policy makers to identify aspects of a city in which improvement can be made. Theoretically, policy makers can monitor performance over time through comparative studies. However, critics of benchmarking argue that a 'one-size-fits-all' methodology is inappropriate as it does not take into account the distinct elements of each city. They claim that the method is too simplistic to establish the desirability of a city for those looking to relocate, reside or establish and operate a business. There are also a number of methodological complexities involved in benchmarking studies, including the availability of consistent datasets across all cities. In addition, benchmarking reduces datasets into an easily understood rank order of cities which obscures the complex processes operating beneath the indicator (Casey, 2011). Despite these limitations, however, benchmarking is often used. In the following section we outline why.

Why Benchmark?

The tendency to make comparisons is not new. In 1954, Festinger developed a formal theory to explain the way that individuals evaluate their own lives by comparing themselves to others. Festinger argued that people have an innate drive to look beyond themselves and examine others in order to assess their own situations. This, he says, is a natural process of self-realisation or self-awareness. The comparison of places is not an entirely new exercise either; the oral and written histories of explorers and travellers documented the ways in which the new destination differed from their places of origin – culturally, physically and socially.

In mid-2009, for the first time, more than half the world's population lived in urban areas. The trend towards greater urbanisation is predicted to continue in both the developing and the developed world, with just under 70 percent of the world's population predicted to live in cities by 2050 (UNDP, 2009, p. 1). Alongside this growth, there is an increasing awareness of the economic role of cities within nation states (Castells, 1996; Clark and Moonen, 2011). Cities are conceptualised as dominant economic actors, described in competitive terms and ranked according to their perceived economic success. Success is measured using many metrics, including ability to attract labour and capital, levels of innovation and reputation. From a policy perspective, it is considered that intervention can alter the social and economic pathways of city-regions and thus improve their overall competitiveness. As a consequence, data is required to track how that progress is made.

[1] See Huggins (2010) for a review of arguments for and against city benchmarking.

With regard to benchmarking, it is increasingly recognised that city comparisons are complex and that the processes and systems within a city require significantly more analysis than that which can be captured in a single headline indicator (Casey, 2011). Furthermore, the process of comparison can itself exert an influence on the way that cities operate and thus impact its development. Being aware of what happens in other cities is an integral component of benchmarking, and this awareness has expanded under the influence of globalization and increased levels of connectivity, both virtual and otherwise, between cities. This represents a movement away from introspection and an insular perspective. Using Plato's allegory of the cave, perception and reality can change dramatically once a person operates outside their familiar environment.

Furthermore, increased migration can result in people becoming connected to more than one city through their business and personal networks[2] and as a consequence forging relationships between cities. Taylor et al. (2002) criticise the dominance of *attribute* measures over *relational* measures in social science in general, and in the study of cities in particular. Taylor et al.'s focus is on the study of cities within a global system, where it is the relationships between cities that are important, in terms of trade, exchange of ideas and people. Attributes of the city are important to measure, they explain, but they do not tell us anything about the flows, connections and linkages of goods, services, ideas, money or other intangibles between cities.

This leads us to a number of key questions about benchmarking studies: comparison by whom, for what audience and for what motives? In the following section, we discuss these questions in relation to existing benchmarking studies that include Auckland, and indicate how and in what ways the studies are relevant to the local government policy making process.

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[2] This process is called transnationalism (Glick-Schiller, N., Basch, L., & Blanc-Szanton, C., 1992). For a discussion of transnationalism in relation to cities, see Glick-Schiller & Caglar (2009).

Types Of Benchmarking Studies

International benchmarking studies have been used for economic development policy purposes in Auckland by local and central government, and previous studies use benchmarking indicators to explore and track the relative position of Auckland with comparator cities.[3] There are many benchmarking studies, all of which measure various aspects of city performance and functioning, and were established for a variety of audiences. Taylor (2011) has developed a typology of benchmarking studies which is a useful way of understanding the different approaches. These are:

5. Business cost-oriented studies,
6. Liveability-oriented studies,
7. Performance-oriented studies, and
8. Sectoral studies.

The first benchmarking studies were business-cost studies for specific cities and were produced for private firms in the 1970s. The Swiss Bank UBS tracked the relative cost of doing business and maintaining employees in different cities in the 'Prices and Earnings Survey'. Similarly, Mercer Consulting's 'Cost of Living Survey' and the Economist Intelligence Unit's 'Cost of Living' database were intended to guide companies on remuneration rates for employees that moved abroad, to ensure that there was equalisation in their purchasing power and living standards in their new country of work (Taylor, 2011).

Moving on from viewing employees as labour units, the benchmarking process began to focus on the quality of life that employees would experience in different destination countries/cities. These liveability-oriented studies began from the perspective of multinational firms, and examined the quality of life for expatriate employees rather than the quality of life of a city's own residents. International studies that fall into this category include Mercer Consulting's 'Quality of Living Survey' and the Economist Intelligence Unit's 'Quality of Life Ranking'.

The New Zealand 'Quality of Life' project, a collaboration between city councils, created a consistent indicator set for monitoring major New Zealand urban areas. These domestic projects have the advantage of being tailored to the needs of local decision makers, who are also involved in the design of the project. As a consequence, the reporting framework is relevant to the local context and addresses questions and issues that have been identified locally. The Quality of Life survey from 2001, 2003 and 2007 covered four Councils in Auckland – Auckland, Manukau, North Shore and Waitakere, while the 2010 survey was extended to cover all areas within the new amalgamated Auckland Council jurisdiction.

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[3] See for example Market Economics (2011) for selected indicators and SGS (2008) for a comprehensive description of indicators.

The distinction between international and domestic benchmarking is important, as a city's relative place within its own country cannot be overlooked. The issue of attractiveness or competitiveness relative to other New Zealand cities is crucial, given the significance of internal migration (Bell, 2002). Migration between cities or regions is generally less difficult than international migration because the latter transitions often involve meeting restrictive eligibility criteria for work and residence as well as navigating cultural barriers such as language. Certain factors make a city more desirable to residents within a country. These attractors are traditionally service based, including health, medical and educational services, however, labour market opportunities and the perceived resilience of cities are also considered important.

The performance-oriented international studies attempt to assess the relative position, competitiveness or importance of cities and countries in the global economy. There are many of these studies including: Transparency International's 'Corruption Perceptions Index' in which New Zealand ranks highest in terms of perceived lack of corruption; Global Metro Monitor which looks at the performance of cities in the wake of the global financial crisis of the late 2000s; and PriceWaterhouseCooper's 'Cities of Opportunity' which does not include Auckland, as it does not appear in the top 26 cities. This latter point is important, as the selection or use of a benchmarking study by a particular city can be determined by whether that city is included in the study and how highly it is rated within it.

Sectoral benchmarking studies focus on the competitiveness of a particular industrial sector within a city. Examples of such benchmarking include 2ThinkNow's 'Innovation Cities Top 100 index', which looks at overall innovation levels and RMIT's Global University City Index which examines the attractiveness of studying in a city. Auckland was excluded from the latter index because the city's population was less than the threshold of two million people. This highlights another limitation of benchmarking studies. Auckland may indeed have scored highly in the various components of this index, but due to its 'unique' smaller size, it is not evaluated. Other sectoral benchmarking studies, such as the World University Ranking rate particular institutions located within cities. The University of Auckland is currently ranked in the top 100 in this study. There are numerous travel and tourism related studies, such as Euromonitor's 'Top City Destination Ranking', where Auckland is ranked 79th.

The above benchmarking studies measure various attributes of cities, often incorporating subjective assessments. By contrast, the Globalisation and World Cities Research Network[4] attempts to measure the relational aspects of cities (how they interact with one another), recognising the limitations of measuring only attributes. This involves measuring a broad range of economic and private sector indicators to determine the commercial interconnectedness of large cities. It is a means of assessing the global hierarchy of urban areas and ranks them as 'alpha', 'beta' or

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[4] For more information on the Globalisation and World Cities Research Network see www.lboro.ac.uk/gawc/.

'gamma' regions. This is a different classification taxonomy based on a network analysis of flows between cities and the clustering of similar cities in terms of number, strength and frequency of flows. Auckland is classified as a 'beta' region, and rather than give a rank order, the cities are clustered in groups of cities with similar characteristics relating to interconnectivity. This is a different way of presenting data on cities, moving from a hierarchical classification to a network or clustering of attributes. The impetus for this change came from the recognition that significant developments had been made in measuring urban performance, but the ranking approach (which gets the most media attention) often suffers from serious methodological shortcomings (Taylor, 2011).

Use Of Benchmarking In Auckland

Table 1 shows a summary of selected international benchmarking studies which feature Auckland, listed according to Taylor's (2011) classification outlined earlier. Although we have tried to include all those in which Auckland features, we acknowledge that the list may not be exhaustive.[5] It is important to note that Auckland does not feature in some of the most commonly used benchmarking studies, such as the MasterCard Worldwide Centres of Commerce, and also that the results for Auckland are not always reported when it does not feature in the top ranks, for example the Anholt City Brands Index.[6] See Appendix 1 for detailed information on each of the benchmarking studies included in Table 1.

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[5] The table can be updated as necessary in the future.

[6] It is possible to contact these information providers and access the Auckland data, as Brand Capital did when creating the Auckland Inclusive City Brands Index. This customised data usually has a cost as it has to be purchased from the providers.

Type	Title of Study (latest year) / Provider	No. of Cities Compared	Auckland Rank	When Published
Business cost-oriented studies	Price and Earnings Survey (2010) / UBS	73	26th	Biennially (2 years)
	Cost of Living Survey, (2011) / Mercer Consulting	221	118th	Annually (Financial Year)
	Worldwide Cost of Living Survey (2011) / Economist Intelligence Unit	140	n/a	Annually (Financial Year)
	International Housing Affordability (2012) / Demographia	82	71st	Annually (3rd Quarter)
	People Risk Index (2010) / AON	90	36th	Annually (3rd Quarter)
Liveability oriented studies	World's most Liveable City (2011) / Economist Intelligence Unit	140	10th	Annually (Financial Year)
	Worldwide Quality of Living Survey (2010) / Mercer Consulting	221	4th	Annually (Financial Year)
	Most Liveable City Index (2011) / Monocle Magazine	25	13th	Annually (Financial Year)
Performance oriented studies	Corruption Perceptions Index (2010)* / Transparency International	183	1st	Annually (Calendar Year)
	City Brands Index (2007) / Brand Capital (using Anholt City Brand Index)	30	19th	Annually (Financial Year)
	Global Metro Monitor (2010) / Brookings and LSE Cities	150	91st (2009-10)	First Study 2010
	City Governance Index (2008) / Jones Lang LaSalle	33	9th	Annually (Calendar Year)
	Global Urban Competitiveness Report (2010) / Global Urban Competitiveness Project	500	107th	Annually (Financial Year)
	State of World Cities (2008) / Globalization and World Cities (GaWC) Research Network	525	40th	Biennially (2 years)
Sectoral Studies[7]	Innovation Cities, Top 100 Index (2010) / 2ThinkNow	100	70th	Annually (3rd Quarter)
	World University Ranking (2011-2012) / Times Higher Education	400	173rd	Annually (Financial Year)
	Top City Destination Ranking (2011) / EuroMonitor International	100	62nd	Annually (1st Quarter)
* This benchmarking study is undertaken at a national not city level				

Table 1 Auckland in Selected International Benchmarking Studies

The results for liveability in Table 1 above show that Auckland ranked 4th, 10th and 13th respectively. These disparate rankings are the consequence of the different methodologies used in each study and an understanding of these is critical for interpreting the results. Moreover, the datasets used as evidence for each component may differ across the studies, even if they all measure similar factors, such as levels of crime. These components are all listed in Box 1. In summary, a thorough understanding of the datasets underpinning each index is required, including how categories and factors are chosen and weighted, as these can significantly change the outcome of the study.

Box 1: What factors do the quality of life surveys measure?

The **Economist Intelligence Unit's 'Quality of Life'** has nine quality of life factors: material wellbeing; health; political stability; family life (divorce rate); community life (church attendance or trade union membership); climate and geography (latitude); job security; political freedom; and gender equality (in terms of earnings) (Economist, 2005). The survey uses a subjective life-satisfaction survey to derive weights for the various determinants of quality of life across different countries. The indices for the nine quality of life factors are generated within the EIU and also from UN datasets.

Mercer's annual 'Quality of Living Survey' collects data on 39 criteria for a target audience of expatriates. The criteria fall into the following categories (the number of criteria appears in brackets): political and social environment (5); economic environment (2); socio-cultural environment (2); medical and health considerations (8); schools and education level (1); public services and transport (7); recreation (4); consumer goods (5); housing (3); and natural environment (2). The categories are weighted, based on perceived relative importance. Categories that have a high rating relative to others are: political and social environment; medical and health considerations; public services; and transport.

Monocle's (the lifestyle magazine) 'Most Liveable Cities Index' has components that measure safety/crime; international connectivity; climate/sunshine; quality of architecture; public transportation; tolerance; environmental issues and access to nature; urban design; business conditions; pro-active policy developments; and medical care.

While each of these studies aims to benchmark cities on the quality of life of residents, the different measures, datasets and scope of the various components leads to differences in a city's perceived performance across studies.

It is important to note that volatility in exchange rates can affect price structures in comparisons of costs across different cities. Similarly, the way that inflation is incorporated may affect the overall ranking, for example whether prices are used for the components measured within the survey or whether a more general consumer price index (CPI) is chosen. If a city experiences a housing boom with high inflation in house and rental prices, this can have a significant impact on the cost of living in that city, whereas if this housing boom is not reflected in the CPI for the whole country, such inflationary pressures are be picked up.

Data comparability is also affected by large differences in the geographic size of cities. For example, Demographia use the footprint of a city to define the boundary of analysis, as they see an urban area as a continuously built up land mass of urban development. This may not coincide with the administrative unit, which in Auckland's case consists of rural and agricultural land (both inside and outside of the metropolitan urban limit).

The details of inequalities across the city are lost in benchmarking studies. This is a problem associated with aggregation of data in general, but the problem becomes more pronounced for local governments that are planning and managing trade-offs at

a local level where differences in conditions matter in the provision of services to communities.

The performance and sectoral benchmarking studies are usually focused on a particular characteristic of the city, such as the ease of doing business, or how the city is perceived (its status, brand or image). These studies are relatively specific in terms of subject matter but they do not overcome the problems associated with integrity and compatibility of data. Moreover, there is a danger in assuming that because data is used in an international context it is therefore more reliable.

The creation of composite measures and indicators masks detailed data that can be checked and verified at a local level. Composite indicators are created by aggregating a range of indicators that represent complex and multi-faceted issues. Both the Mercer Quality of Living Survey and the Economist Intelligence Unit's Liveability Rankings use composite indicators. The validity and relevance of composite indicators is limited as their component measures have lost their separate meaning through aggregation. In addition, the components are weighted subjectively. In some cases, a city with good scores across all indicators and dimensions may not rank as highly as a city that has performed exceptionally in some indicators or dimensions and poorly in others. Lastly, composite indicators do not adequately measure a city's liveability because the composition of the indicators reflects only the preferences of a specific audience.

Burton and Woolcock (2010, p. 10) summarise the methodological limitations of indices in the following way: 'the integrity and compatibility of data among cities; the overstatement of the cause and effect relationship between indicators and city outcomes, and the subjectivity of the analysis and conclusions'. A report on international city comparisons by the city of Melbourne came to very similar conclusions, arguing that although many benchmarking studies suggest that it is possible to assess complex issues and policy responses by reducing them to a single indexed score or rank, such an approach is flawed. There are two key reasons for this: firstly, the aims and audience are often narrow, biasing the selection of indicators; and secondly, small survey samples and subjective measures are used which means that the results do not reflect the quality of life of the majority of a city's residents (Casey, 2011).

Interpreting Results of Benchmarking Studies

In order to facilitate an understanding of benchmarking datasets, Taylor (2011) devised a checklist for policy makers to use when evaluating ranking studies (Box 2). This enables a critical appraisal of the benchmark indicator's suitability and relevance for use as a measure in a policy context. We use this checklist in Appendix 1 to provide detailed information on each of the benchmarking studies listed in Table 1.

Box 2: Checklist for evaluating ranking studies

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1. **Why was it produced and for whom?**

   - To help Human Resource departments develop compensation packages for expatriate employees?
   - To inform makers of economic development policies?
   - As an intellectual exercise?
   - As a commercial exercise in the provision of data?*

2. **Is it narrowly focused or are different types of information combined into holistic scores and rankings?**

   - What is the rationale for the weighting of different types of data within overall scores?
   - Are scores calculated for different categories of variables? If so, does the city's performance vary from one category to another, or is its performance consistent across different domains?

3. **Is there a full description of data, information, sources and methods? Is the study therefore replicable and verifiable?**

   - How much of the underlying data pertains to current as opposed to an early stage of the business cycle?
   - What is the rationale for the selection of cities? Does the universe of cases only include cities in wealthy industrialised countries, or also developing areas?
   - Is there a risk of mixing and matching data based on different spatial definitions of metropolitan areas?
   - Are other composite indexes used as input variables? Or does the study rely exclusively on primary data?
   - Are techniques used that may exaggerate or otherwise obscure differences in city performance? – e.g. normalisation, standardisation or aggregation?
   - How do price movements (inflation) and exchange rates affect the ranking?*

4. **Are previous editions available?**

   - Do they cover an entire business cycle?
   - How volatile are the scores and rankings over time?
   - Are trends or patterns visible?
   - If data sources and methods are described, is there consistency between one edition and the next?

added by author.

The process of ranking a city's performance in relation to others is not a trivial task. Aspects of a city and the attributes that make it what it is, such as its history, politics, communities, people and environment are unique and thus not captured in the benchmarking studies identified in Table 1 above. Additionally, consideration should be given to the theoretical underpinning of the measures. Composite measures may not align directly with what the Council is interested in. For example 'safety' may be measured by the number of reported crimes in a city, whereas another perspective on 'safety' may include the number of pedestrians killed, preventable accidents, or indeed the incidence of, or threat from, a natural hazard such as a volcano.

As with any indicator, the simplification of the many factors that influence the quality of a place can lead to very simplistic and/or incomplete analyses that can create misleading perceptions about the city. This is also the case for composite measures that are included in most of the benchmarking studies. Indicators are developed to measure what is valued. The choice of indicator is a critical determinant of the behaviour of a system (Meadows, 1998). In general, indicators are assessed with respect to their relevance to the concept under scrutiny, the frequency of measurement and consistency over time, their availability and their comparability (Statistics New Zealand, 2009; Meadows, 1998). Accounting systems collect and aggregate information for decision makers, while also influencing behaviour through that process. The things that people value are accounted for, and are usually used to evaluate change or performance. There is a risk in using a specific indicator as part of the policy making process if that indicator is not aligned with the concept that policy makers are trying to measure or if there is a flaw in the methodology of measurement.

The indexing of cities shows their relative rank. Very small changes, for example in the weights used or the ranking of another city, can impact the ranking order significantly even though the city itself may not have changed.

As previously stated, there is potential for a selection bias in the use of benchmarking studies. For example, Auckland did not feature in PWC's 'City of Opportunity' study as it was not in the top 26 cities they report on. It is unlikely that a city will report on *exclusion* from a study, yet this might be more informative or indicative of relative performance.

While attracting mobile skilled labour is important for contemporary cities, it is also critical to account for the perspective of a city's current residents. A city's inhabitants and its policy makers have a rich understanding of how their city functions and operates, including an indigenous knowledge set. Gaps in the knowledge base can be readily identified by local policy makers and it is at this level that indicators and measures should be conceptualized and developed. There is a danger in relying on statistics that are often produced with the same data that policy makers have access to (or generate themselves) and thoroughly understand, but that are analysed aggregately by external agents. Rich detail gets lost in the aggregation process. The New Zealand 'Quality of Life' project, for example, harnesses rich local knowledge and provides an appropriate indicator framework that facilitates comparisons between

Auckland and other cities. In addition, Auckland Council is currently developing its own definition of liveability and a set of measures to enable progress to be monitored over time.

It is difficult to get agreement between international cities on the composition of a comprehensive indicator set that is of direct use and relevance to all participating cities. Although criticized as being anglophile, it is perhaps for this reason that many of the quality of life benchmarking studies choose the factors to measure – as there are cultural similarities across countries that have a shared cultural history (e.g. through colonisation or language).

Conclusion

City benchmarking is useful for establishing the relative attractiveness of a city-region. It is of particular importance for assessing how competitive a place is with regard to attracting skilled labour and investment. In addition, it can also assist in retaining the existing labour force. If there is out-migration of skilled labour from a city, for example from Auckland to various Australian cities, understanding how Auckland compares to those destination cities can assist policy makers to devise appropriate interventions to retain that pool of labour.

City benchmarking data also provides numerical 'sound bites' that ambassadors and advocates can use to promote their city. Beyond this promotional use, however, the validity and usefulness of indicators is questionable. The international benchmarking studies are fraught with methodological issues and data verification problems that are obscured in the composite and indexed indicators.

After reviewing the benchmarking studies that incorporate Auckland, it is important to distinguish between: 1) the development of monitoring tools and theoretical models; 2) research and techniques of measurement; and 3) the operational use of those measurements. The issues are different for all three, ranging from the philosophical to the methodological and the pragmatic.

It is necessary to develop a thorough understanding of those characteristics of the city we wish to be measure and the most valid way of accomplishing that measurement. Traditional published statistics are not always sufficient to analyse fully the complex concepts and problems that are experienced and addressed in cities. Although there is a natural tendency to look beyond city limits to see how it compares to others, there is a danger in relying on off-the-shelf benchmarking studies to answer complex questions. These benchmarked studies rely on aggregates and averages which obscure the rich details of the local context.

Rather than relying on existing indicators and benchmarking studies, and thereby limiting the conceptual framework to available datasets, a comprehensive framework devised locally is required. This framework should then be populated with data that is aligned to the concepts that are valued by residents and policy makers in that city. Indicators are developed to measure what is valued. The choice of indicator is a critical determinant of the behaviour of a system. In general, indicators are assessed with respect to their relevance to the concept under scrutiny, the frequency of measurement and consistency over time, their availability and their comparability. This technical report, together with the Liveability Framework and Chapter 13 of the Auckland Plan comprise a first step towards addressing these issues for Auckland.

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Appendix 1

Benchmark study	**Price and Earnings Survey**
Provider	**UBS**
Auckland's current rank	Auckland is ranked 26th out of 73 cities.
Why produced and for whom?	UBS has produced a Price and Earnings comparison every three years since 1971. It looks in detail at prices for goods and services, as well as wages and working hours for 14 professions in 73 cities worldwide. New York City is used as a benchmark. The study is produced for business and overseas travellers.
Narrowly focused or uses different types of information?	The Price and Earnings study calculates living cost based on a survey of 154 items categorised into 122 products. The survey asks 112 questions about wages, payroll taxes and working hours for 14 separate occupations. Comparator cities include New York, Manila, Nairobi and Singapore, without taking into account their employment situation, occupational profiles and consumption structure. Price index rates are adjusted for market exchange rates. The rates used are from the International Monetary Fund World Outlook, April 2011.
Data sources described?	An overview of the Methodology is given.
Previous editions available?	Yes, dating back to 2006.
Limitations	The UBS Report on Price and Earnings uses a 'common' European basket of goods and services to reflect costs of living across all cities. This could cause an upward bias for cities in the East as Western goods tend to be more expensive in Asian cities. Monthly wage data is based on national statistics, with some adjustments to make them more comparable due to slightly different data definitions. This introduces a level of bias to wage rates as levels tend to be higher in cities.
References	Giap, T. K., Yam, T. K., Khuong, V. M., Qiangyang, G., (2011), *UBS ACI Wages Comparison Report*, Asia Competitiveness Institute, Lee Kuan Yew of Public Policy, National University of Singapore. http://www.spp.nus.edu.sg/aci/docs/20110503_UBS_ACI_Wages_Comparison_report.pdf UBS, (2011), Price and Earnings – Update of 2009 edition, UBS AG, Wealth Management Research, Switzerland. Clark, G. & Moonen, T. (2011), The Business of Cities: City Indexes in 2011, downloaded from www.thebusinessofcities.com.

Benchmark study	**Cost of Living Survey**
Provider	**Mercer Consulting**
Auckland's current rank	Auckland is ranked 118th out of 211 cities.
Why produced and for whom?	The aim of the Cost of Living Survey is to provide government and the private sector with information they need to calculate fair, consistent expatriate compensation packages based on the cost of living in various cities.
Narrowly focused or uses different types of information?	The Cost of Living Survey utilises three indices to accommodate differences in shopping habits: 1. The reversible Mean-to-Mean index – Mercer identifies this as the best indicator of overall differences in prices between two locations because it compares the mean prices in the base city to the mean prices in the host city. 2. The Efficient Index – applies to a relatively experienced shopper and compares the averages of the low mid prices in the base city to the mean prices in the host city. 3. The convenience Index – applies to a less-experienced shopper or a newcomer in the location, and compares the average of the low mid prices in the base city to the high prices in the host city (except for selected categories for which it compares mean base prices). These indices are applied to 10 categories and are weighted in relation to observed behaviour. Mercer surveys the cost of over 200 items in these categories in 143 different cities to establish the differential cost of living between each city.
Data sources described?	The methodology is only partially explained. Past reports and the usability of 11 different Global HRMonitor Calculators are available through subscription.
Previous editions available?	Past reports are available for purchase, but these are possibly limited to those from the previous year.
Limitations	Mercer conducts a Cost of Living survey that is generally similar to the Economist Intelligence Unit's Worldwide Cost of Living Survey in that it collects prices for approximately 200 products and services in more than 140 cities. Mercer's quality of living index is based on a survey of a small number of expatriate workers in each city which has a bias towards narrow aims and samples. Its audience includes companies, expatriates and high income earners. This is not a good measure to use for liveability as it does not apply to residents of a city.
References	Mercer (2006) *Quality of Living – Explanatory notes*, Mercer Human Resources Consulting, Sydney, Australia. SGS Economics & Planning (2008) *Auckland City Performance Analysis. Final Report June 2008*. Report prepared for Auckland City Council.

Benchmark study	**Worldwide Cost of Living Survey**
Provider	**Economist Intelligence Unit**
Auckland's current rank	Auckland is not ranked in this study.
Why produced and for whom?	The Worldwide Cost of Living Survey is primarily designed for human resource managers and expatriate executives to calculate fair compensation policies for the relocation of employees. The purpose of the cost of living index is so that companies can give employees a premium in locations that present difficult living conditions, physical hardship or unhealthy conditions.
Narrowly focused or uses different types of information?	The Worldwide Cost of Living Survey compares living costs in 130 cities in 90 countries. To assess the cost of living in each of the cities, the survey gathers detailed information on the cost of different items. A total of 167 products and services are assessed in each city. A cost of living index is calculated from the price data to express the difference in the cost of living between any two cities. The cost of living in the base city is always expressed as 100. The cost of living in the destination is then indexed against this number.
Data sources described?	An overview of the calculation of the cost of living index is provided. No details are given about how the survey data was obtained.
Previous editions available?	No.
Limitations	Many of the items included in the cost of living index are either not available in the destination or of a quality that does not permit them to be included in the report. This absence of certain items reduces the index comparison to only those items that are available are of reasonable quality. EIU's Worldwide Cost of Living Survey is conducted at selected central shopping locations in the city in question, not in suburban neighbourhoods. EIU mentions in the worldwide cost of living calculations that given these realities, companies should use the cost of living index for such problem cities as only a partial guide to fixing remuneration levels.
References	Burton, P. & Woolcock, G., (2010) *Green Star Communities Information Papers – Draft Final Report*, Urban Research Program Griffith University, Australia. SGS Economics & Planning (2008) *Auckland City Performance Analysis. Final Report June 2008*. Report prepared for Auckland City Council. Economist Intelligence Unit (2012) *How is the cost-of-living index calculated?* Enumerate Solution, The Economist Intelligence Unit Ltd.

Benchmark study	**International Housing Affordability**
Provider	**Demographia**
Auckland's current rank	Auckland is ranked 71st out of 82 cities.
Why produced and for whom?	To provide a comparative analysis of housing affordability across 227 cities worldwide.
Narrowly focused or uses different types of information?	This survey covers 159 cities in Australia, Canada, New Zealand, the United Kingdom and the United States. The survey uses the median house price to median household income multiple to rate housing affordability. The median house price information is generally obtained from the national industry reporting agencies. In some cases, the survey estimated weighted median prices where available industry data was inconsistent with the geographical market definitions. Where median house price data was unavailable, they were estimated from historic conversion factors. Median household income data was generally estimated using statistics bureau generated base adjusted to a current estimate by the best indicator of median income growth.
Data sources described?	An overview of the methodology is given.
Previous editions available?	Yes.
Limitations	Demographia's rankings are based on the theory that urban planning places an unnatural restriction on the supply of land for development, thus putting pressure on housing affordability. This equates to a perspective that planning for growth in many aspects constitutes an artificial restriction on supply of residential land which drives down housing affordability. They do not consider other possible causes of unaffordable housing.
References	Burton, P. & Woolcock, G., (2010) *Green Star Communities Information Papers – Draft Final Report*, Urban Research Program Griffith University, Australia.

Benchmark study	**People Risk Index**
Provider	**AON**
Auckland's current rank	Auckland is ranked 36th out of 90 cities.
Why produced and for whom?	In 2010, AON Consulting introduced a major new study of corporate employability in 90 world cities. The People Risk Index helps business leaders identify sources of people risk in order to improve their overall risk management strategy.
Narrowly focused or uses different types of information?	To determine the People Risk Index, AON Consulting identified 25 risk factors grouped into five areas of risk by location: • Environment • Government • Education Levels • Talent Development • Employment Practices Each of the 25 factors has a 10-point scale associated with five statements. The lowest possible score (no risk) is 25 points (i.e. one point for each factor) and the highest possible score (maximum risk) is 250 points.
Data sources described?	Researchers relied on publicly available statistics from reliable sources for initial assessment ratings followed by regional reviews by AON consultants. Results are thus based on quantitative sources as well as qualitative internal expert analysis.
Previous editions available?	No, this is the first one.
Limitations	The disadvantage of this study is that the scoring and rankings are based evaluators' perceptions.
References	Clark, G. & Moonen, T. (2011), The Business of Cities: City Indexes in 2011, downloaded from www.thebusinessofcities.com. AON Consulting (2010) Highlights of the 2010 People Risk Index.

Benchmark study	**World's most liveable city**
Provider	**Economist Intelligence Unit**
Auckland's current rank	Auckland is ranked 10th out of 140 cities.
Why produced and for whom?	The Economist Intelligence Unit's liveability index quantifies the challenges that might be presented to an individual's lifestyle in any given location, and allows for direct comparison between locations.
Narrowly focused or uses different types of information?	The ranking scores 140 cities from 0 – 100 on 30 factors spread across five areas: stability, health care, culture and environment, education and infrastructure. These numbers are then weighted and combined to produce an overall figure. The survey gives an overall rating of 0 – 100, where 1 is intolerable and 100 is ideal.
Data sources described?	No, unless you purchase the Liveability Ranking and Overview.
Previous editions available?	Yes, but only for the previous year.
Limitations	A city that has good scores in each of the ranking indicators may not rank as highly as a city that has performed exceptionally in some rankings and poorly in others.
References	Burton, P. & Woolcock, G., (2010) *Green Star Communities Information Papers – Draft Final Report*, Urban Research Program Griffith University, Australia.

Benchmark study	**Worldwide Quality of Living Survey**
Provider	**Mercer Consulting**
Auckland's current rank	Auckland is ranked 4th out of 221 cities.
Why produced and for whom?	The Mercer Quality of living survey is designed to advise governments and major companies on the amount of compensation required to offset expatriates who experience a decline in living conditions in their new host location.
Narrowly focused or uses different types of information?	The Mercer Quality of Living Survey is an index that rates over 380 cities based on 10 key categories and 39 criteria, each with weightings reflecting their relative importance. The 10 key categories along are listed below: • Political and social environment – e.g. political stability, crime and law enforcement. [23.5%] • Economic environment – e.g. banking services. [4.0%] • Socio-cultural environment – e.g. civil liberties. [6.4%] • Health and sanitation. [19.0%] • Schools and education. [3.4%] • Public services and transportation. [13.0%] • Recreation. [9.0%] • Consumer goods. [10.7%] • Housing. [5.1%] • Natural environment – for example, climate. [5.9%] An overall Quality of Life index is calculated with New York City used as the base city with 100 points. Each indicator is given a rating of between one (lowest score) and ten (highest score). These indicators are then weighted to produce an index, the higher the index, the better the quality of living. Compared to the base city (i.e. New York), an overall ranking is then produced.
Data sources described?	An outline of the Methodology is given. No detail is provided on the data collection, how the data is reviewed nor how it is analysed. Without knowing this, it is difficult to determine the validity and consistency of the reporting of results between individual cities.
Previous editions available?	No.
Limitations	The introduction to the methodology section in Mercer's explanatory notes on the Quality of Living Survey stresses that cultural differences are avoided and comparisons are only made of factors that are of basic concern to all international employees. Mercer claims that this removes biases towards American, European or Asian standards, but in doing so neglects 90% of the target population. It should be noted that the target population of this study is aimed at high income earners.
References	Mercer (2006) *Quality of Living – Explanatory notes*, Mercer Human Resources Consulting, Sydney, Australia. SGS Economics & Planning (2008) *Auckland City Performance Analysis. Final Report June 2008.* Report prepared for Auckland City Council.

Benchmark study	**Quality of Life Survey**
Provider	**Monocle Magazine**
Auckland's current rank	Auckland is ranked 13th out of 25 cities
Why produced and for whom?	The Quality of Life Survey uses a combination of scientific data and subjective opinion to come up with a list of the top 25 most liveable cities in the world.
Narrowly focused or uses different types of information?	The Most Liveable Cities Index is created by ranking the results from the Quality of Life Survey. Important criteria in this survey are: • Safety/Crime • International connectivity • Climate • Quality of Architecture • Public transportation • Tolerance • Environmental issues and access to nature • Urban design • Business conditions • Pro-activity policy developments • Medical care
Data sources described?	No methodology available.
Previous editions available?	Only by subscribing to Monocle Magazine.
Limitations	The website pitches its Most Liveable Cities Index to individuals on a personal level, rather than to international companies. The magazine, however, provides a global perspective on international affairs, business, travel, culture, fashion and design to wealthy, mobile, cosmopolitan readers, so the target audience is still selective.
References	Casey, N. (2011) *City of Melbourne – International City Comparisons*, Melbourne City Research, Melbourne, Australia Monocle Magazine (2011) The world's to 25 most liveable cities, Issue 45, Volume 5.

Benchmark study	**Corruption Perceptions Index**
Provider	**Transparency International**
Auckland's current rank	New Zealand is ranked 1st out of 183 countries.
Why produced and for whom?	Transparency International's Corruption Perceptions Index ranks almost 200 countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys.
Narrowly focused or uses different types of information?	The Corruption Perceptions Index ranks countries according to their perceived levels of public-sector corruption. The index draws on different assessments and business opinion surveys carried out by independent and reputable institutes. The surveys and assessments used to compile the index include questions relating to the bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and questions that probe the strength and effectiveness of public-sector anti-corruption efforts. The Corruption Perceptions Index ranks countries/territories based on how corrupt their public sector is perceived to be. A country/territory's score indicates the perceived level of public sector corruption on a scale of 0 - 10, where 0 means that a country is perceived as highly corrupt and 10 means that a country is perceived as very clean. A country's rank indicates its position relative to the other countries/territories included in the index.
Data sources described?	A standardised ranking system is used to determine the Corruption Perceptions Index. The source information comes from outside expert assessment and surveys targeted at businesses.
Previous editions available?	Yes, dating back to 2002.
Limitations	Transparency International's Corruption Perceptions Index is an average of several other country measures. Some of these examine the frequency of corruption and others measure quantity i.e. the amount of money involved. Since the measuring of sources changes, comparing corruption between countries and over time with the Corruption Perceptions Index is inappropriate.
References	Transparency International (2010) *Corruption Perceptions Index,* Transparency International, International Secretariat, Germany.

Benchmark study	**Anholt City Brands Index**
Provider	**Simon Anholt**
Auckland's current rank	Auckland is ranked 19th out of 30 cities.
Why produced and for whom?	The Anholt City Bands Index assesses how people perceive the image of cities using a survey of nearly 20,000 consumers in 20 countries.
Narrowly focused or uses different types of information?	To measure the strength of a city's band, the city's Brand index is based on the following six components: • The presence – city's international status and standing • The place – peoples' perceptions of the physical attributes of the city • The potential – the economic and educational opportunities the city offers • The pulse – the appeal of a vibrant urban lifestyle • The people – how the people of the city are perceived • The prerequisites – the basic qualities that the city should have. In order to rank cities, information was derived for these six components using an online survey.
Data sources described?	No information on the methodology is provided.
Previous editions available?	Yes
Limitations	City Brand indices tend to focus on a visitor's perspective as opposed to a resident's perspective. The rankings are based on scores that are 'averages' of averages, which can introduce a degree of subjectivity to the ranking process.
References	Casey, N. (2011) *City of Melbourne – International City Comparisons*, Melbourne City Research, Melbourne, Australia SGS Economics & Planning (2008) *Auckland City Performance Analysis. Final Report June 2008*. Report prepared for Auckland City Council.

Benchmark study	**Global Metro Monitor**
Provider	**Brookings and LSE Cities**
Auckland's current rank	91st (Recovery 2009-2010) 55th (Recession 2007-2010) 55th (Pre-Recession 1993-2007)
Why produced and for whom?	The Global Metro Monitor evaluates 150 of the largest metro economies worldwide, as measured by their total economic output. It also portrays metro economic performance in a broad cross-section of world regions.
Narrowly focused or uses different types of information?	The report measures the economic performance of metropolitan areas using two main indicators: the annual growth rate of real Gross Value Added (GVA) per capita and the annual growth rate of employment over three distinct economic periods: - Pre-Recession – between 1993 and 2007 - Recession – commencing 2008 and continuing to the end of 2009 and 2010 for some countries. - Recovery – most recent activity, 2009 to 2010. In order to create a ranking of metropolitan areas in each of the three periods, the Global Metro Monitor combines calculations of each metro area's performance on income and employment growth, giving an equal weight to each sub-measure. Each rate is standardised by comparing each variable with the median value.
Data sources described?	A comprehensive outline of the methodology is provided, including the make-up of formulae and the way that rankings are determined. Data is provided by a range of statistical agencies.
Previous editions available?	This is a one off study.
Limitations	While every effort is made to keep data conceptually consistent across countries, the study is still limited by the data collection and statistical methods utilised by each country's statistical agencies. Consequently, each indicator may be calculated slightly differently on a country by country basis.
References	The Metropolitan Policy Program (2010) *Global Metro Monitor,* The Brookings Institution, London School of Economics and Political Science, London.

Benchmark study	**City Governance Index**
Provider	**Jones Lang LaSalle**
Auckland's current rank	Auckland is ranked 9th out of 33 cities.
Why produced and for whom?	The City Governance Survey was undertaken to assist in the development of a greater understanding of city governance. The survey aims to: • Understand the contributions of governance to the overall competitive position of a city in the global urban hierarchy. • Highlight the implications of city governance from a real estate perspective. • Build a governance analysis that facilitates global comparisons of city governance performance, especially from a real estate market point of view.
Narrowly focused or uses different types of information?	The Jones Land LaSalle City Governance Index is derived from a city governance survey. The survey was carried out in 33 cities and considers two elements of a city's governance: City Management and City Marking. Survey questions are designed to include the following key measures: **City Management** • Physical integrity – Consistency between geography of political administration and functioning economic region. • City Autonomy – Capacity of a city to allocate financial resources according to its spending priorities. • Financial Stability – relates to the predictability of the business environment. • Efficiency – the degree to which the governance structure is capable of providing outputs. • Effectiveness – capacity of the structure to act in a way that positively affects the city. **City Marketing** • Efficiency • Effectiveness For each measure, the survey sets out three types of question: an opinion question, a factual evaluation and a real estate factual evaluation. Qualitative comments are collected for each question. Results are checked with the opinions of external experts and data verification checks are also carried out.
Data sources described?	No.
Previous editions available?	No.
Limitations	None identified.
References	SGS Economics & Planning (2008) *Auckland City Performance Analysis. Final Report June 2008*. Report prepared for Auckland City Council.

Benchmark study	**Global Urban Competitiveness Report**
Provider	**Centre of City and Competitiveness**
Auckland's current rank	Auckland is ranked 107th out of 500 cities.
Why produced and for whom?	The Global Urban Competitiveness Report is a research endeavour managed by a group of international academics.
Narrowly focused or uses different types of information?	The authors of the report define urban competitiveness as a city's ability to create wealth, relative to other cities in the world. The 2007-8 report measured the competitiveness of 500 cities around the world across 9 indicators. These were: • GDP • Per Capita GDP • Per unit area GDP (density) • Labour productivity • Number of multinational firms • Number of patent applications • Price advantage • Economic growth rate (%) • Employment rate The first report used a total of 103 indexes to measure a range of different aspects of urban competitiveness, including enterprise competitiveness, industrial structure, human resources, hard business environment, living environment, and global connectivity. By 2009-10, the theme of the report had changed to focus on 'Innovation', reducing their data to six indices more heavily targeted at the knowledge economy and creativity – including Green Economic GDP per capita.
Data sources described?	No.
Previous editions available?	Report first published in 2009.
Limitations	The study is limited because it is impossible to obtain some of the long time-series data of such a large sample cities of .
References	Global Urban Competitiveness Project (2010), '2009-2010 Global Urban Competitiveness Report, Centre for City and Competitiveness, Chinese Academy of Social Sciences, Nanjing, China.

Benchmark study	**State of World Cities**
Provider	**Globalisation and World Cities Group** **(GaWC) Research Network**
Auckland's current rank	Auckland is ranked Beta 69 out of 525 cities.
Why produced and for whom?	The study provides figures for comparative density of business firm networks, based on a benchmark of 100 for the most connected city (historically either London or New York). GaWC Research Network ranks cities based on their connectivity through four "advanced producer services": accountancy, advertising, banking/finance, and law. The GaWC inventory identifies three levels of global cities and several sub-ranks. This roster generally denotes cities in which there are offices of certain multinational corporations providing financial and consulting services rather than denoting other cultural, political, and economic centres.
Narrowly focused or uses different types of information?	GaWC Research Network assesses each city in terms of their advanced producer services using the Interlocking Network Model (developed by GaWC). Indirect measures of flows are derived to compute a city's network connectivity that measures a city's integration into the world city network. The connectivity measures are used to classify cities into levels of world city network integration. These levels are interpreted as follows: **alpha++ cities** In all analyses, London and New York stand out as clearly more integrated than all other cities and constitute their own high level of integration. **alpha+ cities** Other highly integrated cities that complement London and New York , largely filling advanced service needs for the Pacific and Asia. **alpha** & **alpha- cities** Very important world cities that link major economic regions and states into the world economy. All **beta level cities** These are important world cities that are instrumental in linking their region or state into the world economy. All **gamma level cities** These can be world cities linking smaller regions or states into the world economy, or important world cities whose major global capacity is not in advanced producer services. **Cities with sufficiency of services** These are cities that are not world cities as defined here but have sufficient services so as not to be overly dependent on world cities. Two specialised categories of city are common at this level of integration: smaller capital cities, and traditional centres of manufacturing regions.
Data sources described?	Background about how the Interlocking Network Model operates is provided. It includes information about the equations used.
Previous editions available?	GaWC Research Network has published summary findings for 2000, 2004,

	2008 and 2010.
Limitations	GaWC Research Network note that the telecommunications data has a regional rather than global focus, which means that in this case, the study is only able to obtain European or North American sections of networks, rather than global networks.
References	Globalization and World Cities group (2011), 'The World According to GaWC 2010'.

Benchmark study	**Innovation Cities, Top 100 Index**
Provider	**2ThinkNow**
Auckland's current rank	Auckland is ranked 51st out of 100 cities.
Why produced and for whom?	2Thinknow is an Australian based agency that focuses on urban innovation. The Top 100 Index ranks cities according to levels of innovation.
Narrowly focused or uses different types of information?	The Innovation Cities Global Index classifies 331 benchmark cities across several continents into five performance classes. Cities are selected from a list of 1,540 cities worldwide. These are cities 2thinknow analysts are monitoring for innovation relative to competing cities. All benchmark cities are classified into the five classifications. There are also a limited number of unranked cities published for comparative purposes. The five classifications are assigned based on index scores. These are explained under each index. They are as follows: • NEXUS: Critical nexus for multiple economic and social innovation segments. • HUB: Dominance or influence on key economic and social innovation segments, based on global trends. • NODE: Broad performance across many innovation segments, with key imbalances. • INFLUENCER: Competitive in some segments, potential or unbalanced. • UPSTART: Potential steps towards relative future performance in a few innovation sectors. Nexus and hub cities are best for innovation across multiple economic sectors, based on their three-factor index scores: The index score for each city is derived using 162 city indicators across 31 industry and community segments. They are weighted and summed up into three factors: • Cultural Assets of a city from arts to sports industries. • Human Infrastructure, from mobility to start-ups, health, finance and more. • Networked Markets, the power of a city in a networked world. The analysts release an index score out of 30 for top cities.
Data sources described?	The 2011 methodology is explained for each index. This can be reproduced or quoted in any articles or research on the topic. The Innovation Cities Analysis Report for can also be purchased.
Previous editions available?	Yes, but they need to be purchased.
Limitations	Previously 2Thinknow sent requests to the administrators of major cities around the world to participate in its annual innovation cities study. In effect it invited city administrators to score their own cities, introducing a potential source of bias. 2Thinknow has now changed this methodology and is using external personnel as analysts, rather than city administrators.

References	2ThinkNow (2011) *Media Release: Top 100 City Rankings for the Innovation Economy,* 2ThinkNow, Australia.
	Casey, N. (2011) *City of Melbourne – International City Comparisons*, Melbourne City Research, Melbourne, Australia

Benchmark study	**World University Ranking (2011-2012)**
Provider	**Times Higher Education**
Auckland's current rank	The University of Auckland is ranked 173 out of 400 universities.
Why produced and for whom?	The *Times Higher Education* World University Rankings are used by undergraduate and postgraduate students to help select degree courses, by academics to inform career decisions, by research teams to identify new collaborative partners, and by university managers to benchmark their performance and set strategic priorities. This study measures the best universities by subject rank area, and the best universities as voted by employers.
Narrowly focused or uses different types of information?	The World University Ranking is based on 13 performance indicators, grouped into five areas: - Teaching — the learning environment (worth 30 per cent of the overall ranking score) - Research — volume, income and reputation (worth 30 per cent) - Citations — research influence (worth 30 per cent) - Industry income — innovation (worth 2.5 per cent) - International outlook — staff, students and research (worth 7.5 per cent).
Data sources described?	An extensive breakdown on how the rankings are determined and how information is gathered for rankings is provided with the methodology.
Previous editions available?	Yes, dating back to 2004.
Limitations	Times Higher Education bases their data on a global scale to compare universities fairly across international borders. The drawback of global ranking is that it does not capture comparative and performance information between institutions and countries.
References	Times Higher Education (2011) *World University Rankings 2011 – 2012,* Times Higher Education, TSL Education Ltd, London.

Benchmark study	**Top City Destination Ranking**
Provider	**EuroMonitor International**
Auckland's current rank	Auckland is ranked 80 out of 100.
Why produced and for whom?	Euromonitor International, an independent provider of business intelligence on industries, countries and consumers, releases an annual City Destinations Ranking, covering over 230 of the world's leading cities in terms of international tourist arrivals.
Narrowly focused or uses different types of information?	Euromonitor International's Top City Destinations Ranking is built from the results of the global travel research programme conducted in 58 core countries by in-country analysts. City arrivals data was sourced directly from national statistics offices, airport arrivals, hotel/accommodation stays or other methods for all 58 core countries and 150 market insight countries under review.
Data sources described?	Only a brief explanation given.
Previous editions available?	No.
Limitations	The rankings focus on capital city hubs and tend to exclude beach and ski resorts that may enjoy high volumes of international visitors.
References	Euromonitor International (2011) *Top City Destination Ranking,* Euromonitor International Ltd, London.