

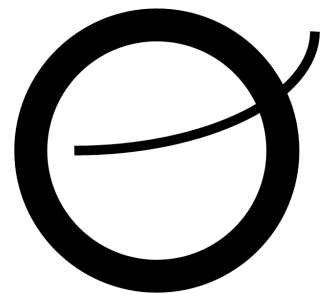


Innovation  
Agency

# Innovation Cities™ Analysis Report.

Innovation Analyst: Christopher Hire.  
October 2011 Edition. R5.

GLOBAL INNOVATION REVIEW.  
ANNUAL SERIES 2011.



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Copies of this report may be ordered via the website: [report.innovation-cities.com](http://report.innovation-cities.com)

Additional information relating to the Innovation Cities™ Program, Framework & Index are available from the website: [www.innovation-cities.com](http://www.innovation-cities.com)

City benchmarking data™ available from: [www.citybenchmarkingdata.com](http://www.citybenchmarkingdata.com)

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# Welcome

An Introduction from 2thinknow  
Executive Director,  
Christopher Hire.



The 2011 world is still in turmoil, with two roads ahead. Yet future opportunity exists still in mid-term and long-term innovation.

You hold in your hands the innovation DNA, the secrets & methods of the world's great cities – some emerging, some long established. From Boston to Barcelona to Budapest, from Kyoto to Melbourne to Abu Dhabi, this innovation analyst report provides a method for a truly comparative understanding of city innovation across global cultures.

Let me add my personal welcome to this updated 2011 post-Index report. 2thinknow developed the Innovation Cities Framework to enable this comparison of actual innovation across continents, nations and states.

We are in the adolescent stage of a networked age. An age of networked technology, and as 2008 to 2010 convulsions suggest, networked markets. This has an air of inevitability, only arrested by contrary localisation, and shudders of an old model economy.

We are moving into an innovation economy where an idea can be inspired, implemented and marketed from a single node of origin across a network.

This report is a much improved, updated and continually redesigned version of our first: the Global Innovation Review 2007 Annual. The journey to this current report started with our first research visit to Vienna and Europe, in October 2005. This Program and Report have evolved from 5 years of significant effort, start-up growth and investment of cash, time and in-kind resources from 2thinknow.

**The Innovation Cities Index 2011** is the world's leading comprehensive multi-indicator ranking of cities by innovation as featured in over 500 news articles.

Our unique index shows which cities – those remarkable engines of economic growth – are outperforming in innovation across industries. Of course, these cities must continue to pursue innovation.

OECD has shown nations like Korea and Norway that innovated economically, outperformed after previous recessions. 2thinknow are now doing this for cities.

The **City Benchmarking Data Program** is metrics for innovation across 31 segments/162 indicators from Arts and Sports, to Education and Industry, to Diplomacy and Economics.

Finally, the overarching **Innovation Cities Framework** – a model that enables cities to change their innovation destiny through strategic planning.

In 2012, we will be working more closely with more cities worldwide to do that, to change their stars by maximising their innovation strengths and excoriating weaknesses. It is 2thinknow's aim to be the world's leading city data thinker and provider, and *always independent*.

We live in a competitive regional, continental and global world. There will be winners and losers, while competition over the economic pie escalates. Let us now build Innovation Cities to solve today's problems and create *progress* again for our children.

Keep Innovating!



Christopher Hire  
Executive Director of Innovation

## Who buys this report.

The report has been purchased by:

- Corporate R&D Departments
- City CEOs
- Trade & Investment Boards
- City Mayors
- Parliamentary Libraries
- Investors & Capitalists
- State Government Departments
- City Policy Professors
- Innovative Thinkers
- Market Think Tanks
- Urban Think Tanks
- Journalists
- Start-ups
- Media Agencies
- Urban Planners
- International Entrepreneurs
- Global citizens & thinkers.

And, those citizens interested in investing in, changing, developing, growing, revitalising, and otherwise improving and benefiting from our cities.

## Approach.

Our goal is to balance a broad range of issues, in a framework that is flexible enough to adjust to circumstance.

# Using this Report.

This report outlines a modular framework that adapts to issues cities face. Based on challenges of today and the future, indicators can be added to or removed from the Innovation Cities™ Framework [ICF] to evolve & adapt.

Innovation in cities is a driver of their social and economic development. Right now, the global context for cities is a response to the 3 City Challenges of Economics, Environment and Equity, and that will remain unchanged until 2020 onwards.

This 2thinknow analyst report is designed to enable readers to explore and start to apply *true* multi-sector thinking on innovation, and understand how innovation affects cities. This is a structured flexible approach, not academic theory.

**Globe in Context.** Environmental disasters and economic slowdown threaten smaller geographic nation's revenue streams, and in some cases continued feasibility as nations.

Larger nations may find past economic strengths becoming future weaknesses, in the face of environmental and social change. Nascent social unrest may intensify due to inequity. A plethora of books address these issues at the national level, but few at a city level.

Headline influential books for cities are available in our Innovation Reading List supported by Amazon. The address is [www.innovation-bookstore.com](http://www.innovation-bookstore.com)

To make sense of the world, we have set out some simple summary models for understanding and applying innovation models to cities. There is our 3 City Challenges Model. Our 21 Global Trends – key critical trends – follow this.

We then broaden these and other facts into a 2010s narrative about each of the major continents and countries – from

U.S.A. to Europe's borders, China and India to Australia, Africa, the Mid-East and beyond. During this time, the analysis focus is on critical issues and points, and reference further readings for review as we head through the text.

Our goal is to create usable insight that can be quickly communicated – so our clients have the resources to respond to change quickly.

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### > EXCLUSIVE > DOWNLOAD RESOURCES!

Purchasers of this Innovation Cities Analysis Report can download the diagram, graphs and details for their use in Word Reports or PowerPoint slides.

Go-to: <http://www.innovation-cities.com/report-resources/>

The password is \*\*\*\*\* (case-sensitive)

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**Innovation Cities Framework.** This is a complete modular framework for measuring and embedding innovation in the cities where we live, work and play.

**3 Factors.** The 3 factors of innovation are for analysing & reporting innovation. These headline factors model the process of an idea becoming innovation. Ideas move from inspiration to implementation, and finally to networked markets of stakeholders.

For cities, the 3 factors are Cultural Assets inspiring ideas, creating Human Infrastructure enabling implementation, and Networked Markets for adoption drive the innovation process. e.g. Google could be inspired anywhere, but was developed and ‘went global’ from Bay Area, California.

Many competing models ignore markets. Yet stakeholders must adopt even a non-profit idea, and this is magnified today as so many goods and services are ‘network goods’. i.e. they rely on the number of users for success.

Working from 3 Factors to 31 Segments, we then develop a global picture of innovation in cities drilling down to the detail level of 162 Innovation Indicators.

These indicators are the specifics of city performance. However, they must be modular and broad-based, not solely focussed on one person’s opinion of the day’s balanced topics.

**Our analysis.** We have a bi-partisan analyst’s world-view – based on data, books, papers and journals we have reviewed – albeit with an underlying Adam Smith free markets and Ricardo trade mechanism.

Each city has cultural aspects that require adjusting to – and there is no “one-size-fits-all” city development solution. In general, our model of segments and current indicators is designed around the *key insight* that

cities, government and business work best when they enable citizens and business to innovate.

Therefore, the presence of basic services – food, water, available energy – which are under threat, are coupled with *Cultural Assets* and the broader *Human Infrastructure* needed by start-ups and creative citizens. Finally, there is the indisputable observation that larger markets lead to more customers – and so that access to *Networked Markets* is important for implemented ideas to grow large enough to be innovations. These can be regional, national, or global markets.

In addition, networked markets will grow ideas globally from a person in a city. This can be magnified by personal mobility, delivered at a lower environmental cost by fast-transit.

Network economics and viral 1-to-1 marketing are new to urban planning. Yet this is critical to what Stanford’s Everett Rodgers called the *Diffusion of Innovations*, in the book of that name.

**31 Segments.** When discussing industries we avoid the word ‘industry’ – and use the label ‘segment’. Industry denotes a business or corporate approach – something that omits social, and community initiatives, and the economic value of mid-size firms and a growing post-2008 role of Non-Governmental Organisations.

Use of *segment* (and interchangeably *innovation segment*) includes industry – amongst also Arts, Music, Spirituality, Fashion, Geography and other attributes that can be utilised to maximum advantage to develop a cities potential. Whether measured at current or not –

## Jargon & Buzzwords.

The Innovation Cities Framework is modular, to allow the adding or removing of current issues.

These are among the many themes we draw on in this edition:

- Local Food Supply
  - Start-Up Financing
  - Start-Up Culture
  - Water Supply
  - Re-pricing the natural world
  - Revitalising small cities
  - Spatial Data
  - Design as the solution
  - Green / Clean Jobs
  - Behavioural Economics
  - Renewable Energy
  - Government 2.0
  - Services 2.0
  - Open Government
  - Web 2.0 / Social media
  - Network economics
  - Crowd-sourcing/Collaboration
  - Equity and Innovation
  - Fast-Rail
  - Car-sharing
  - Inter-modal Transport
  - Open Innovation
  - Security & Local Community
  - Community Gardens and Markets
  - Wired Broadband
  - Wireless Internet
  - Cosmopolitanism vs. Feudalism
  - Futurism
- These are addressed under specific indicators. **Our goal is a balance all of issues**, in a framework that is flexible enough to adjust to circumstances – today and in 5, 12 or 40 years.

segments have economic and social value for citizens with ideas.

**162 Innovation Indicators.** These standard indicators explained in the report, to align with today's issues, as well as the long-term economic and social innovation. We quantify and assess qualitative data, turning the difficult to assess into the useful to measure data. We focus on these substantive segments, we measure objective existence, not comparing style, school or 'merit'.

A full list of segments and standard indicators in the Innovation Cities Framework are outlined in this report. In the online content, we provide some added information re Indicators.

All data produced at the indicator level is available in a separate product – *City Benchmarking Data* – using a proprietary application of data granularity; we work to add meaning to the underlying indicators. By keeping the range of scores focused, we can ensure any movement in score has *meaning*.

When used in conjunction with 2thinknow City Benchmarking Data, clients are now able to purchase summary reports and analysis that outline a cities relative global position concisely. This will increase in 2012.

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**> PURCHASE > CITY BENCHMARKING DATA**

2thinknow city benchmarking data for all global cities available for purchase.

Single City Data-sets [SCD] profile a city on all 162 standard indicators.

Comparative City Data-sets [CCD] can also be purchased, comparing any selected cities on selected indicators.

[www.citybenchmarkingdata.com](http://www.citybenchmarkingdata.com)

**Innovation Cities Index.** In the last brief section, we examine the methodology of our annual general city rankings of cities for 2011. There were 331 indexed cities in 2011.

In 2010, the global and 4 region indexes had 289 cities scored, up from 256 in 2009. In 2009 the Index was an official part of the E.U.'s European Year of Creativity and Innovation, and in 2010 written up in Boston Globe, Reuters, NY Times opinion and more media.

The Index acknowledges the importance of the city-state, and relative innovation performance. By focussing on a well-rounded analyst review of performance – like 12-month stock prices – we avoid the extremes of the issues of any given day. Some cities such as Boston, New York, Tokyo, Paris, or London will likely feature highly in any rankings as these cities have already achieved a broadly balanced innovation economy across a broad-range of indicators.

Our general index ranking lets cities know what their preconditions for innovation are at a moment in time, provided they continue to work at innovation. Some city governments such as Sydney have to 2010 reduced their inherently higher ranking, through short-sighted development decisions.

Conversely the community, local government and business of Boston '*punch above their weight*' and maximise their cities advantage. Cities like London stand on the precipice – but will recover, when their ship is righted.

Our general indexes are based on complex methodologies that balance different types of innovation. For custom data and analysis, contact 2thinknow.

**Collaboration & Learning.** Cities must learn from each other's experience – learn globally & implement locally. In networks, it is clusters of all kinds – virtual as well as physical – that win. Although physical clusters have a primacy in the long-term, poor geography can be offset by learning.

However, university-based cluster thinking to date fails to deliver the necessary economic and social outcomes. Our broader-based segment innovation approach is an alternative.

Beyond sustainability – a key challenge – cities will need to ensure government policies give citizens' freedom to innovate. Heavy-handed regulation is too horrific – and faithless in the best angels of human nature – to contemplate.

So, compete and collaborate. Moreover, just as a restaurant strip raises all restaurants wellbeing, a cluster of top cities – on an industry or geographic basis – raises other cities wellbeing. The best example, is that no one German city dominates, yet all German cities do well.

This report is a starting point for a city. Skills training in development can be found via our Local Innovation Forum™ events or the Innovation Course™ workshops from 2thinknow. We also provide a free reading list at: [www.innovation-bookstore.com](http://www.innovation-bookstore.com)

**The new wealth of cities.** This report is an educational summary for those who seek to rethink, grow, invest in and profit from the new wealth of cities. Wealth and opportunity invariably follows culture

– just as the first artists revitalise property 10-15 years or so before gentrification sets in.

An innovation-enabling cities idea may start with the simple and local – e.g. government service vending machines, opening cities to pedestrians not cars, open data applications. Alternatively, a large commitment like an international airport or sports stadium. A car-sharing program. Or a Curitiba bus-program, Copenhagen shared roads or a specific tailored economic program.

**What you need to do.** You do not have to read this entire work or understand every aspect to get an idea. By applying our framework as metrics to your city, you can start to see how well your city scores on various factors.

Readers of this report can purchase 2thinknow City Benchmarking Data containing actual performance data for a single city or multiple cities. (Innovation Cities Index is from a sub-set of this data). Clients can change all the indicators, redefine the basis for scoring them and produce your own city rankings.

Business, investors, think-tanks, media or government can engage 2thinknow innovation analysts to develop analysis, deliver advisory or custom indicators – to answer specific questions about city performance. Ask us for what you need.

However, we are outlining here the Innovation Cities Framework, for the broader community aims of lasting change in improving our cities. We all win as we build cities with the strongest economic and social development.

By benchmarking successful cities, our framework enables new city models to grow now, and into the future.



## Our Office.

Our innovation space is hosted in Melbourne landmark the Rialto.

Sandwiched between law firms and surrounded by retail, coffee, food uber-cool wine bars, clubs and an amazing cup-cake shop!

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Melbourne VIC 3000  
AUSTRALIA

## Was your idea (or a colleagues') in this report?

If in the Innovation Indicators you feel we missed an attribution – easy to do in the mammoth amount of reading – please do let us know. We'd also ask, you also always attribute Innovation Cities to 2thinknow. Also, if you'd like to get in touch about your idea, simply email us any time.

\*If we have quoted your work and ideas, please get in touch. Let us know what you think!

Whatever your reasons for reading, 2thinknow wish you good fortune.

## Resources

Full resources on the Innovation City Program & Index rankings are online at [www.innovation-cities.com](http://www.innovation-cities.com)

This report, or custom analyst reports can be purchased from 2thinknow. More: [www.2thinknow.com](http://www.2thinknow.com)

## Data

Full city benchmarking data on any city on 162+ indicators is available for order. City Benchmarking Data is available as Single-City or Comparative-City Data-sets.

See [www.citybenchmarkingdata.com](http://www.citybenchmarkingdata.com)

## Analyst Briefings

Innovation consulting services and analyst briefings available via phone or in-person.

## Speaking & Events

From late 2011 and into 2012, speaking engagements are now available based on a seasonal calendar.

## Please contact us anytime.

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## About the Author.

Christopher Hire is Executive Director of Innovation and founder of 2thinknow. Based in Melbourne, Australia.

Hire developed 2thinknow Innovation Models in 2005, and authored the Global Innovation Review 2007 Annual.

Previously he consulted/trained in data analysis (developing KPI, finance, HR, dashboards and other solutions) & presentation across all sections of government, NGO and corporate organizations. This has included Parliament of Victoria, Federal/State Government, Catholic Education, Lend Lease, banks, insurers, and other corporations.

Hire in 2012 is available on a global calendar for selected speeches, workshops & engagements.

2thinknow analysts are also now available to consult and train in 2012.

## Acknowledgements

The Innovation Cities Models and Framework were conceived by Christopher Hire in Europe in 2005.

A report of this nature is always more than one person's work. So we'd like to acknowledge the numerous professors from Harvard, Imperial College, MIT, Melbourne University, Oxford as well as all the prolific authors and thinkers whose ideas Hire selected (and quoted)\* to form the current set of indicators.

Thanks to the many early contributors who provided thoughts on the ideas at behind the framework. A special thanks to Sam and Eva, as well as our graduate analysts.

And, connect on social media:  
[www.2thinknow.com/social/](http://www.2thinknow.com/social/)

## Oct 2011 Release Notes

Some changes to this edition, have been made since June.

We have added the 3 factor scores, and an updated Location Index. We also have updated multiple sections to reflect recent European and Asian events.

### Change policy for assumptions

While many commentators were predicting economic stability, based on their linear models, history shows that sideways movements and long sustained periods of incremental progress and regress are the norm in volatile times.

In many ways, the linear models that make so much sense in a boom make little to no sense in volatile periods.

Change is predictable however, even in chaos.

As an innovation agency, 2thinknow analysis seeks to tell a consistent story, that does not vary on the up or down movement of one day's stock market.

So we see stories as long and mid-term trends, with short-term 'shocks' often foreseeable. With this in mind the current European currency and debt crisis (really a money supply and trust crisis) is something that only has a few probable scenarios.

The first force driving these scenarios is the continuation of pan-European forces, and close economic integration as a trade bloc. This has been our pre-

dominant assumption from 2007 to 2011.

However, economic nationalism, and the complexity of European political factors means that a series of potentially nationalist, separatist fragmentation (and competing countries) can still lead to a break-down in the larger European integrated market.

Until October 2011 we have assumed that European self-interest would prevail, and the pan-European market forces dominate. It is conceivable as we edit this final report changes in November 2011, that the fragmentation, protectionist and other forces may win.

This reflects the withdrawal of trust within Europe, and thus trade reduction.

Austerity, fragmentation and protection of smaller national interest may change substantially the European project.

However, in the world of trend analysis, this merely serves to reinforce a few counter trends we identified in 2007: including *protectionism*. These assumptions are part of a set of less positive outcomes.

### Scenario End Game

Ultimately, all scenarios (across the gamut of pan-European and national separation) create the rise of the city state, making such a scenario probabilistically inevitable. We do take the view that the networked world trend is itself inevitable.

We are happy to create further scenario analysis of trends for clients, and will also adjust this report as events in Europe further evolve.



# Innovation Actions.

**21thinknow Analyst Recommendations by Region.**

*Request more detail in 2thinknow analysis reports,  
analyst briefings or the Innovation Course.*

# Europe Cities.

**BREAKING UPDATE: The main threat in Europe in 2011 is a retreat to nationalism. This appeared a less likely probability until October 2011, as Europe seemed to seek to firewall Southern Europe's problems.**

**This, of course, now in our analysis is no longer the case. European political differences are forcing a move away from growth and the 'Austerity forces' are winning. Larger entities of the E.U. and nations can slow, impede or stop cities innovating by poor policy decisions. Growth and city innovation economies remain the only answer for Europe in our analysis.**

**The threat of a EU 'economic Armageddon' scenario, is at current the highest it has been since 1931-1932. We rate this now at 50%, unprecedented even in 2008. Of course, this does not need to occur, however, the political structures of Europe, seems to mean that the triumph of interests does not create a 'greater interest' – or a Pan-European interest.**

**Our prescriptive innovation answers are the same. The political culture may or may not adopt these answers, and centralism and austerity may also 'crowd out' or prevent the business culture from adopting these answers.**

**Create a Start-Up Culture.** Cities like Barcelona and Amsterdam are growing creative start-up cultures. Co-opting the best of the more commercial Western cultures, whilst integrating European ideas. Business model innovation must spread, for economic and social development. There must be a cultural adjustment against any European 'new idea resistance' – whilst preserving economic demand.

**Spread broadband and fast-rail.** Swedish cities are on some technology measures equal with Japanese and South Korean cities. 2thinknow analysts would like to see faster broadband (to match fast rail) across all of Europe – including the Balkans and South Europe. City broadband speeds vary at current –published speeds may not mirror user experience. Free wi-fi in cities like Paris is now a strong driver of innovation, but more broadband breadth needed.

**European Cities must increase equity of opportunity.** European cities work to address environmental challenges, but rarely address economic equity of opportunity. Business and trade is the key driver of equity. Individual cities may face key infrastructure challenges –a new broad-based infrastructure is needed enabling greater start-up penetration into European society. Start-ups do not need PhDs, and although an educated society is critical, so is a commercial small business sector.

**Maintain Education Leadership.** On the other hand, continental European cities must preserve the competitive advantage of strong education standards. The 'dumbing down' of public education has been accelerating across Australia, U.K., Canada and the United States, reducing the basic educational stock of these

FOR MORE DATA & ANALYSIS SEE: [WWW.INNOVATION-CITIES.COM](http://WWW.INNOVATION-CITIES.COM)

## Europe Index 2011.

These cities have the best economic opportunities in 2011-2012, based on current volatility.

### NEXUS

Paris  
Vienna  
Amsterdam  
Munich  
Lyon  
Copenhagen  
London  
Frankfurt  
Hamburg  
Berlin  
Milan  
Stuttgart  
Barcelona  
Stockholm  
Rome  
Strasbourg  
Manchester

### TOP HUBS

Düsseldorf  
Nantes  
Brussels  
Marseille  
Oslo  
Bordeaux  
Helsinki  
Prague  
Toulouse  
Cologne  
Tel Aviv  
Budapest  
Leipzig

Source: 2thinknow Innovation Cities Europe Index 2011. See 'City Scores' in this report for full list.