

Digital Work Hubs

An Activation Framework for South East Queensland

December 2013

A collaborative Regional Development Australia project

Sunshine Coast | Moreton Bay | Brisbane | Logan/Redland | Gold Coast

digitalworkhub.com.au

The Future of Regional WORK SPACE

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Disclaimer

It is not the purpose of this report to define the business models and type of digital work hubs appropriate for each region. The purpose is to outline the data, facts and trends to enable key stakeholders in each region to create the type of collaborative workspaces and business models most appropriate to their region. All care has been taken by the authors to interpret the results of the commissioned surveys. However, this report should not be relied upon as professional advice, and no responsibility will be taken for the application of this report's findings by third parties.

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Glossary

Active Work Model encourages employees to choose their work locations between a central office base, a collaborative workspace and home.

Brain hubs are 'graduate thick' regions with innovative, high value-added enterprises, with opportunities for two-income families diverging from 'graduate thin' regions (brain drains) with fewer opportunities for all.

Collaborative consumption is a new economic model that uses network technologies to transform business, consumerism and the way in which we live and work. It is based on a shift in consumer values from ownership to access to products and services.

Community and personal wellbeing or work-life balance relates to the meaningful and positive interaction between where we live and work and how our urban structure, including employment, housing locations and transport infrastructure, impact upon this.

Coworking is where professionals share a collaborative workspace with a focus on building innovation and connection within the community. Its focus is on technology, entertainment, design businesses and freelancers.

Digital disruption refers to the changes enabled by digital technologies that occur at a pace and magnitude that disrupt how we work, social interactions, value creation and, more generally, our thinking.

Digital urbanism is how our understanding of city life and the urban environment is shaped by information and communication technologies.

Digital work hubs are highly curated collaborative workspaces which co-locate a number of activities including coworking (freelancers, entrepreneurs, start ups), and telework (public and private sector employees) into vibrant urban agglomerations/clusters.

Economic agglomeration is where enterprises and talent reinforce and add value to one another through clustering and proximity. The productivity advantage means urban investment has strong multiplier effects. The degree of clustering, density of skills and enterprises in a location is strongly related to its productive capacity.

Effective job density is employment activity relative to time taken to gain access to it.

Knowledge workers are engaged in the acquisition and analysis of information. Knowledge workers are not categorised within the Australian Bureau of Statistics (ABS) Census data. For the purpose of this research project the ANZSOG study (2013) explored two types of different knowledge workers, although it is likely that many fall into more than one.

- a) People working in knowledge-intensive industries, including information, media and telecommunications; financial and insurance services; rental, hiring and real estate services; and professional, scientific and technical services
- b) People working in highly-skilled occupations.

LGA is local government area.

Location Quotient (LQ) shows how concentrated a particular industry, cluster, occupation, or demographic group is in a region compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

In this report, the LQ for 'work type' (work) in a region and 'workers living where they work' (live) are compared to the national average (=1).

For example, if X is the amount highly skilled jobs in a region and Y is the total amount of all jobs in the region, then X/Y is the LQ for highly skilled jobs in the region; if the LQ is less than 1, it is below the national average for highly skilled jobs.

Productivity is a measure of how efficiently goods and services are produced. Urban productivity, for example, is where clustering of employment, dwellings and services benefit from the economies of agglomeration.

Project Study Area – includes the RDA regions of Sunshine Coast, Moreton Bay, Logan/Redland, Brisbane and Gold Coast.

Smart Work Centres – first coined in Amsterdam, are coworking and co-location centres which provide an alternative to working from the office or at home, and are part of the city's Connected and Sustainable Work Policy Framework. A key component is that these centres are close to transport, shops and services.

Social Polarisation is where economic and social forces cause different demographic groups to separate into different areas.

Telework is the practice of working remotely on a scheduled or regular basis while using ICT to stay connected to the office

innovate

collaborate

inspire

communicate

create

DIGITAL WORK HUBS PROJECT

Study Area

SUNSHINE COAST

GRP: \$12.5 billion

Population: 306,907

Work Population: 105,752

MORETON BAY

GRP: \$11.5 billion

Population: 378,046

Work Population: 89,450

BRISBANE

GRP: \$100.3 billion

Population: 1,041,840

Work Population: 632,031

REDLAND

GRP: \$4.5 billion

Population: 138,665

Work Population: 35,461

IPSWICH*

GRP: \$7.1 billion

Population: 166,902

Work Population: 50,891

**Not included in project study area*

LOGAN

GRP: \$9.7 billion

Population: 278,050

Work Population: 73,592

GOLD COAST

GRP: \$23.6 billion

Population: 494,501

Work Population: 184,583

SOURCE SEQ REGIONAL PLAN
2009 & QTT 2010-11

Note: Total working population
for the study area is 1,171,742



1. The Digital Work Hub Project

South East Queensland (SEQ) is projected to grow at an average annual rate of 2.0 per cent and be home to 4.6 million people by 2031 (Queensland Government, 2011). The Gross Regional Product for SEQ in 2010/11 was \$177 billion, of which over \$100 billion was from the Brisbane metropolitan area. While knowledge jobs are clustering into the centre of Brisbane, and to a lesser extent in other activity centres, knowledge workers in SEQ are required to commute to those locations from regions where they have chosen to reside for affordability, lifestyle and community values.

This collaborative Regional Development Australia (RDA) Digital Work Hub Project between Sunshine Coast, Moreton Bay, Logan/Redland, Brisbane and the Gold Coast has examined opportunities and challenges for establishing a network of digital work hubs across the SEQ study area. The aim is to capture productivity and societal gains from offering knowledge workers the opportunity to work in, or much closer to, their region of residence.

Digital work hubs are a regional network of highly curated collaborative workspaces that collocate a number of activities including coworking (freelancers, entrepreneurs, start-ups), and telework (public and private sector professionals) into vibrant urban agglomerations/clusters.

The following trends contribute to the emergence of digital work hubs as an agency facilitating regional growth:

- Regional economic policy challenges in transport and accessibility, driven by sprawling urbanisation and the time, stress and cost of commuting
- An international explosion of coworking and smart work centres as extending collaborative consumption into commercial real estate
- A more flexible model with advances in digital technology and the rise of telework, with new patterns of workforce participation (especially women).

Developing digital work hub networks across a regional area to address such policy considerations is currently untested in Australia.

High speed broadband initiatives, such as the NBN, that support collaborative, connected, denser and accessible urban structures may lead to innovations which address key policy issues in regional development:

- New business models to meet digital economy disruptions
- Regional development infrastructure and transport
- Affordable housing closer to the workplace
- Population growth and the planning of major cities
- Employment participation and distribution
- Health and wellbeing of individuals and communities
- Environmental sustainability and safety.

A modern understanding of approaches to building city networks and infrastructure is required. Integration of knowledge workers into a connected urban agglomeration

improves not only the economic base but also the health and wellbeing of communities (Kelly et al., 2012).

Digital work hubs provide a catalyst for suburban and regional precincts to agglomerate skills, businesses, knowledge transfers and new services – attracting businesses and knowledge workers who choose to reside in the regions.

While telework is now well established, the collaborative workspace is a rapidly emerging area – with four research groups formed in Australia in 2013:

- The Sustainable Digital Cities Network (SDCN)
- Australia Anywhere Worker Research Network
- Workforce Participation and Social Inclusion Network
- Telework Leadership and Management Network

Who benefits from digital work hub project research:

- Public policy and urban planning professionals in digital economy, employment, housing, transport, urban structure and workforce productivity
- Potential investors in/providers of digital work hub services who require information about supply and demand factors
- Commercial and public sector organisations benefiting from flexibility in employee location and reduction in inner-city office rent.

Recommendations

When combined with lifestyle choices of knowledge workers, co-location of businesses in regional digital hubs will contribute significantly to regional agglomeration strategies aimed at reducing the economic divide between cities and regional centres, allowing knowledge industry workers and highly skilled workers to work where they live.

The detailed project conclusions and recommendations as part of a Digital Work Hub Activation Framework are outlined on pages 28 and 29.

The final section of this report (Regional Focus) provides individual analysis (Moreton Bay, Sunshine Coast, Logan, Redland, Gold Coast) and examines commuter flows, skilled and knowledge intensive industry worker data combined with local context information to create initial demand modelling for digital work hubs.

The data of quantified high and medium potential users is further broken down in terms of cost savings, job and capital creation using standard econometric modelling. The additional health and wellbeing benefits are totalled using individual measurements of hours saved commuting, reduction in accidents, additional time for community and so forth. However, the greater value-add of local business contribution to the broader prosperity of the regions was outside the scope of the project.

2. Changing nature of the workplace

The agglomeration of knowledge work in major metropolitan areas, with increasingly unaffordable housing, is currently sorting regions into 'brain hubs' of employment and 'brain drains' from communities where knowledge workers live. 'Graduate thick' clustering in urban locations with highly educated workers and innovative, high value-added enterprises are diverging structurally, economically and culturally from regional 'graduate thin' locations with fewer opportunities for all.

The Digital Work Hub project can help to address this great divergence (Moretti, 2012) through an Active Work Model engaging collaborative consumption to build future regional workplaces.

What does the future workplace look like?

In a report released July 2013 titled *'It's (almost) all about me. Workplace 2030: Built for us'* Deloitte and AMP Capital emphasised the global mega trends influencing their decision making for investment and future exploration and what these trends mean for knowledge workers in Australia.

In addition to the demographic-led changes, the report predicts that power will shift from the institution to the individual, with ideas moving between people via large data and global networks making 'insight' the new currency not 'time' (Deloitte and AMP Capital, July 2013).

Workers will be...

- More diverse and individually empowered
- Highly valued for their connections across business, industries and the globe

Work will be...

- Less about time and more about insight through data and collaboration
- More virtual and global

Workplaces will...

- Enable people to work in the cloud and have their feet on the ground
- Be adapted to multiple needs and purposes
- Be in multiple places, including vibrant precincts.

(Deloitte and AMP Capital, July 2013)

Workplaces will be more digital, integrated and fundamentally, built around you and me Deloitte, 2013, p 17

Workplaces will no longer be a site of containment but a place where people meet, learn and share Deloitte, 2013, p 14

Naturally these trends will influence how we work and live, our productivity and wellbeing. **The report highlights that the workplaces of the future will be designed to connect and facilitate as interconnected hubs allowing people to work from a variety of workspaces that suits their needs and wants.** Significant to current city and regional urban divergence challenges, these collaborative workspaces will provide the catalyst for diverse, vibrant work precincts based on co-location, adjacency and community.

Communities which offer work-life balance, sustainable environmental and community values, quality of life and lifestyle choices, affordable housing and education will then no longer be brain 'drains' but 'hubs' for knowledge workers. As economic demand moves towards highly skilled work, regional communities will retain access to the skilled and talented workforce they need, improving their productivity and developing new high value economic capacity.

Collaborative consumption

Collaborative consumption describes the shift in consumer values from ownership to access. It has a particular focus on using network technologies to do more with less, by renting swapping, and sharing products. Since 2008 the new economic model underpinning collaborative consumption has been transforming business practice, how we consume and impacted on the way in which we live and work.

So how does it work? Essentially collaborative consumption gives people the benefit of ownership, without the personal risk and cost often associated. Importantly it is underpinned by providing more opportunities to connect and collaborate, grouping people with similar interests to share and exchange less tangible assets such ideas and space.

While Airbnb, Zipcar and Airtasker are some well-known examples, coworking has also been described as an extension of collaborative consumption into the commercial real estate model (Cooper, 2013). Coworking spaces have essentially turned offices into a service.

Instead of renting out office space, negotiating leases, retrofitting and setting up IT infrastructure, the shared workspace with a range of membership options (casual to permanent) reduces the high overheads and lowers risk for startups, consultants and small businesses.

This is just the beginning of the value add – coffee, insurance, cleaning, meeting rooms, art exhibitions, training nights and a wide range of people to meet and potentially collaborate with (Biz Dojo, 2013).

The Active Work Model

This shift is also influencing larger organisations, desk ratios and leasing agreements. The Active Work Model is central to the changing nature of the workplace and shift in regional work. It encourages employees to choose their work locations by dividing their working week between a central office base, a digital work hub, and home.

The Active Work Model is similar to Activity Based Working, in which employees are free to move about the workplace and choose their work locations based on the task they are engaged in. A number of Australian and international companies use activity based work including Microsoft, Optus, Commonwealth Bank of Australia and Macquarie Bank.

The Active Work Model advances these productivity gains by:

- focusing on individual preferences
- incorporating teleworking options
- addressing urban policy considerations.

The Digital Work Hub Project

- Enabling both larger public and private sector workers to work between a city-based office, regional digital work hub and home.
- Provide a hub for local large and smaller often home-based businesses to collaborate and drive projects.

Communities which offer work-life balance, sustainable environmental and community values, quality of life and lifestyle choices, affordable housing and education will no longer be brain 'drains' but 'hubs' for knowledge workers.

As economic demand moves towards highly skilled work, regional communities will retain access to the skilled and talented workforce they need, improving their productivity and developing new high value economic capacity.

The move toward online distributed and independent workers is the biggest shift in employment since the Industrial Revolution Matt Cooper, Inc. 7 October, 2013

And while the workforce continues to shift, the traditional office setting will become as obsolete as fax machines and dial-up internet Forbes Magazine, 2013



3. Retaining and building capital in our regions

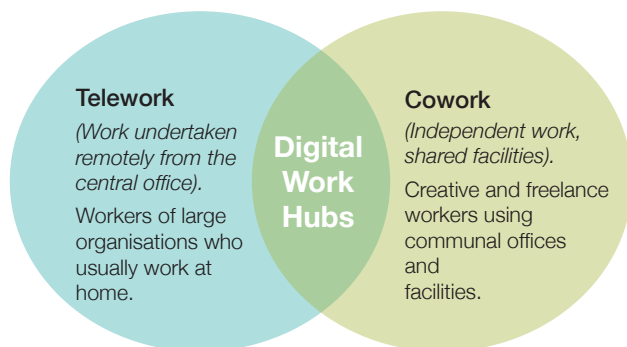
What is a digital work hub?

As knowledge work has concentrated in capital cities, knowledge workers must travel long distances from their communities. This results in loss of capital to our regions, both financial and social, and reinforces the drain in higher value employment, value-added jobs, regional productivity, housing prices and wealth from our regions.

For every knowledge worker job created or retained in a region, an additional 3–5 jobs are created Enrico Moretti, 2012

As our economy changes to higher dependence on a highly skilled worker mix, it is essential for communities to keep skilled workers' time to access employment (effective job density) to less than 45 minutes maximum, with the 20 minute neighbourhood the ideal goal. **Digital work hubs will contribute a local solution to this and lay a foundation for regional growth.**

Digital work hubs will help to retain knowledge workers for several days a week in the community in which they live. Digital work hubs have emerged in Europe at the overlap between corporate **teleworking** arrangements from home and shared **coworking** facilities for creative and independent entrepreneurs. Multiple benefits from this initiative flow through creation of service jobs, innovative businesses, community engagement and enterprise, work–life balance and regional capacity.



See digital work hub concept plan on opposite page.

Digital work hubs help to lay the foundation for regional productive capacity, clustering skills and enterprises in one location, reducing transport infrastructure costs, greenhouse gas emissions, travel and road casualties.

Their purpose is not just to enable people to work and collaborate together but to attract complementary businesses and services into a cluster to boost economic productivity and improve community wellbeing.

This approach seeks to incorporate subsidised and promoted telework by public and private organisations in the commuter zones north, south and west of Brisbane through highly **curated** digital work hub networks.

The approach activates people within the digital work hubs space and the local context – transport, food, entertainment, open space experience and ideas – into vibrant urban and regional agglomerations/clusters.

The approach follows developments in The Netherlands (Amsterdam model) promoting telework, cowork and flow on benefits related to business innovation, ICT, peer-to-peer learning, regional development, population health, environment and transport congestion.

Teleworking

The ability of hybrid telework often makes workers feel more productive, fosters individual wellbeing, promotes better work–life balance and creates a more positive attitude towards work

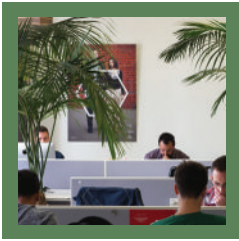
University of Melbourne, 2012, p 3

Research has shown that if 10% of Australian employees were to telework 50% of the time the total annual gains to the Australian economy would be \$1.4–1.9 billion Australian Government, 2013, p 7

While there are established benefits of teleworking from home, significant cultural and legal issues have impeded the widespread take-up of telework over the past two decades; overall, teleworking rates have remained low, particularly for institutional workers (Havyatt et al., 2010). Many of these issues relate to workers being out of a serviced office building – and a social 'place of work'.

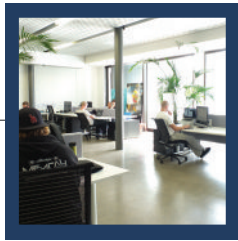
Disadvantages of teleworking from home

- Occupational Health and Safety (OHS) issues in the home office
- Home can be distracting – children, housework, and a lack of suitable space
- Lack of high speed internet and ICT devices, printing, paper
- Transfer of working costs onto the individual
- Isolation and lack of collaboration opportunities, lack of value add
- Difficulty in billing hours, and leverage mechanisms within the company promotion and wage incrimination.



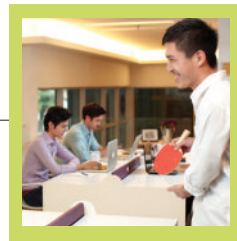
Coworker Area

Shared working environment targeted to entrepreneurs, freelancers work-at-home professionals, contractors or traveling professionals. Opportunities to develop healthy working synergies between independent professionals and contractors.



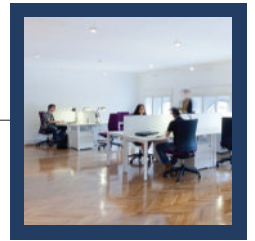
Public Sector Telework Stations

Enables government employees (who traditionally travel to separate regions for work) access to high quality and secure facilities within their own regional areas.



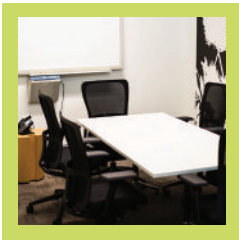
Games

Games room to build relationships & team work.



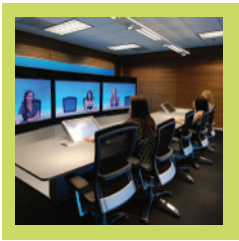
Private Sector Telework Stations

Enables private sector employees (who traditionally travel to separate regions for work) access to high quality and secure facilities within their own regional areas.



Meeting Room

Meeting rooms with audiovisual presentation capabilities. This proposed facility will have a variety of meeting room types and sizes to accommodate different meeting situations.



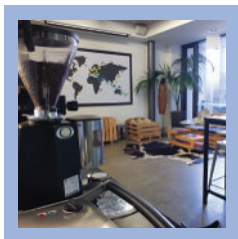
Telepresence

Facilities that create the effect of people in different geographical locations being in the same room through videoconferencing technologies to enable greater collaboration.



Restaurant

A restaurant that engages with the footpath creates a gathering space for people and attracts attention to the building and the businesses that use it.



Coffee Shop & Bar

A cafe & bar becomes an important gathering space for informal meetings and attracts attention to the building and the businesses that use it.



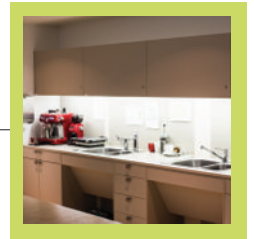
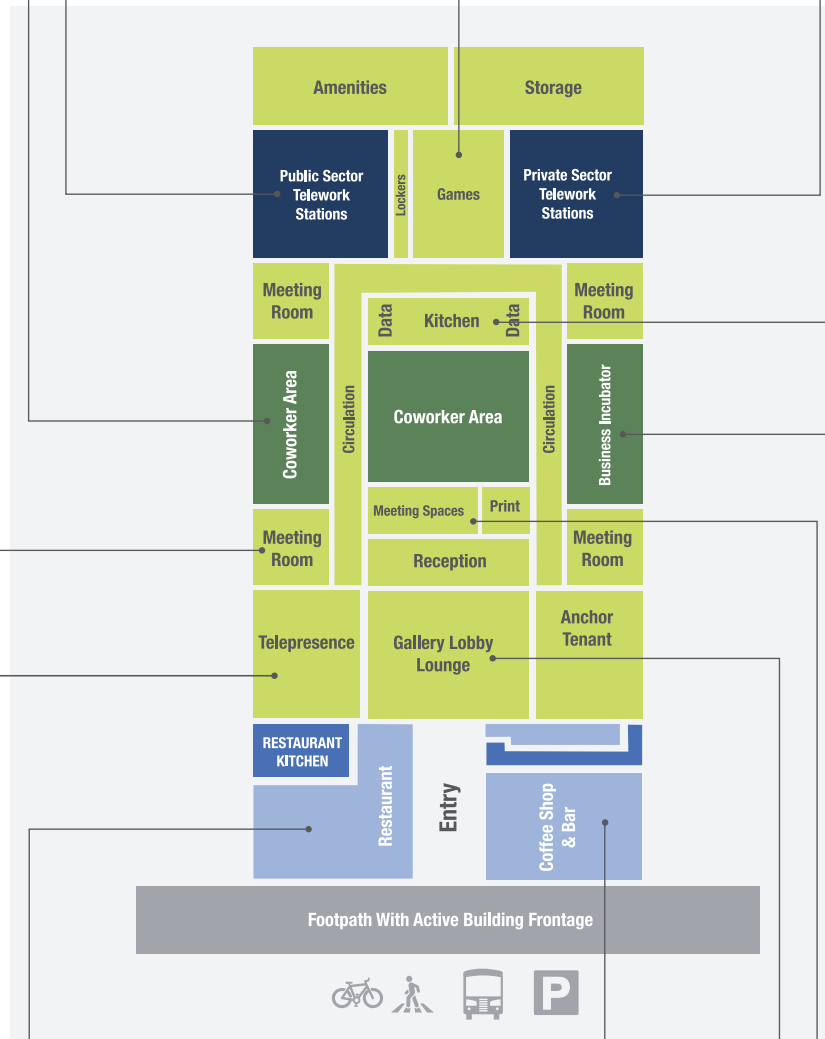
Gallery Lobby Lounge

The main entrance can be used to showcase the innovation and creativity generated by the individuals and businesses that use the space.



Casual Meeting Space

Meeting spaces with audiovisual presentation capabilities.



Kitchen

Shared kitchen facilities



Business Incubator

Managed programs and shared support facilities that enable the growth of start up and entrepreneurial businesses. Tenancies usually less than 12 months.

Advantages of teleworking in a digital work hub

Institutions make substantial savings by economising on space used by workers in expensive CBD areas and partially by subsidising the use of work centres in commuting zones by their employees. Some organisations already subsidise their employees to set up a home office or supply telework equipment.

- Employees have the feeling of 'going to work', instead of being at home with home-based distractions or sharing space with other family members
- Employees gain incidental social interaction from attending a workplace and being supported with appropriate OHS
- Employees may be able to work closer to services they need – in particular childcare and disability services – and therefore be more available for work (McCrindle Research, 2013)
- Employers may become employers of choice through their flexible work practices retaining skilled staff and extending the working years of experienced employees.

Moving toward a more flexible workforce challenges the traditional management systems. In response, the Australian Government has released (October, 2013) **Telework Toolkit, Making telework a success: A guide for leaders, managers and employees.** This excellent resource shows how telework may add value to organisations, an understanding of skills and capabilities required of managers and employees, and a tool to help plan, assess, implement and review telework arrangements.

Coworking

Essentially we believe that we are happier and more productive working together than working alone

www.indyhall.com

One of the first coworking spaces (established in 2006), the Indy Hall in Philadelphia has community, collaboration, openness, sustainability, accessibility as its core values, resulting in a coworking infrastructure between a workforce of people with these values and purpose. Naturally, values and purpose differ between regions and communities, so each coworking space has its own culture. Coworking is about how we work together, based on collaborative consumption, network technologies and connection with community.

Who are the coworkers?

DeskMag 2012 *Third Global Coworking Survey* (www.deskmag.com) reports that 53% are freelancers, while the remainder are entrepreneurs, small company employees, big company employees, and 8% describe themselves as none of the above. While 'other' respondents increased from 5% in 2010 to 8% in 2012, entrepreneurs fell from 18% to 14%.

- Female coworkers grew from 32% in 2010 to 38% in 2012
- 62% work improved significantly
- 90% felt more confident
- 70% felt healthier – reduced stress from commuting times a large component.

Get surrounded by enthusiastic and motivated people. I love the collaboration with creative thinkers and doers. Central location, cool environment and most importantly like minded humans!

www.bizdojo.com

Types of coworking

A hierarchy of coworking types has evolved over the last six years:

- A high membership model with both physical and online participation options, intentionally designed and hosted via events and activities to drive collaboration. City-based high population density. Hub Melbourne www.hubmelbourne.com.au
- A lower more permanent based membership, highly curated, that actively works to attract and connect a diverse community with each other and a wider ecosystem of accelerators, incubators, angel investor networks, local and national government programs and international markets. Biz Dojo New Zealand www.bizdojo.com
- Business incubator and start up community – predominately foster and support entrepreneurs and small business across the technology, entertainment and design spectrum. Fishburners Ultimo, Sydney www.fishburners.org



Curation – the important distinction

Curation replaces noise with clarity. And it's the clarity of your choosing; it's the things that people you trust help you find

Steven Rosenbaum, 2010

Curation of collaborative workspaces creates value by connecting people, information and ideas to deliver strategic results. **Curating** information between members of the community who have made an active choice to pay to work in the digital work hub rather than at home, or in a serviced office, or at a large employer's office, naturally is the **most important component of the shared workspace**. Curation facilitates the whole operation of the centre.

Called *Community Activators*, curator operators or managers underpin the purpose, culture, design and value add opportunities that work centre members are seeking. Decision-making by workers is affected by the design aesthetic of the centre, the spectrum of businesses chosen, local entrepreneurs and champions, and the extent to which connection opportunities exist between people and place within the work centre and its community.

This is distinct from the business incubator model. In the work centre, curation may entail providing free coffee, events and training nights, sponsoring individuals to work in the space, nurturing teams and permanent residents, co-locating with a certain café or bar, community centre

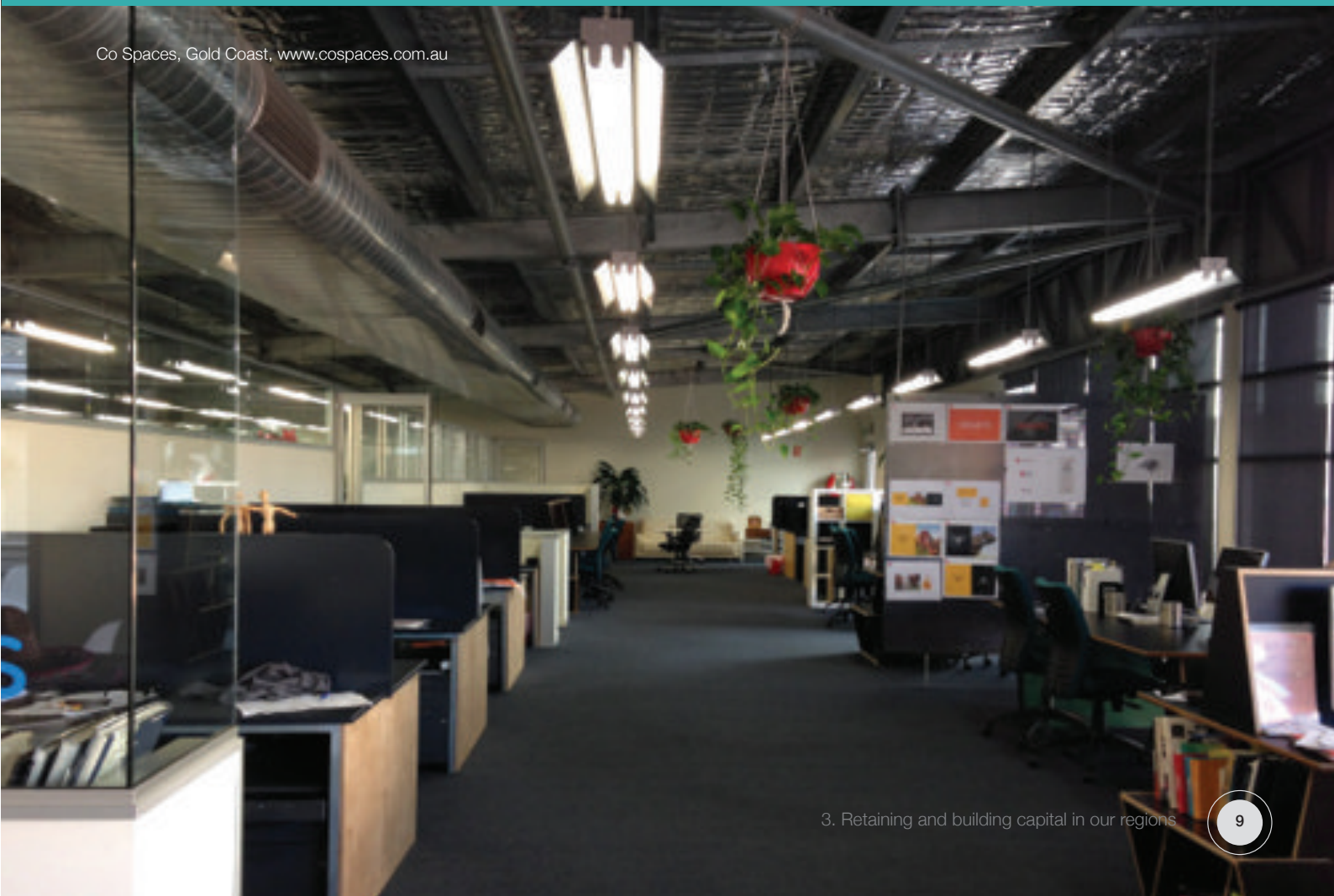
or transport hub. It also requires the necessary functional attributes of taking on the risk of a lease, collecting rent, paying the bills, taking messages and keeping the toilet paper filled. Without management at this level it is just another office space.

Highly curated environments, and the resultant collaborative and agglomeration benefits, naturally require a large percentage of resident permanent small businesses until they outgrow the space. Biz Dojo in New Zealand base their upper limit for community sizes (including casual members) at approximately 120–150; permanent and casual numbers are elastic, and a preferred density in the workspace is one person per 7.5 square metres.

This is based on practical experience of running successful collaborative workspaces across New Zealand over the last five years and several studies that indicate a limit within co-location environments. Additionally, as businesses move out they have tended toward co-locating in the surrounding building or maintaining membership within the space to stay connected and enjoy the collaborative benefits.

- Dunbar (2013) defines a cognitive limit of 150 people with whom we can maintain a social relationship
- *The Future Workplace* study (Morgan, 2012) found that once people in an office were more than 50 metres apart, communication or collaboration drops markedly.

Co Spaces, Gold Coast, www.cospaces.com.au



4. Amsterdam 'Smart Work Centre' case study

SWC represent a significant cultural shift especially for managers who are used to seeing their employees sitting everyday behind a desk

Hans Tijl, Director of Urban Planning, City of Amsterdam
Global City Dialogue, Cologne, 22 February 2013

Randstad is one of the most important economic and densely populated areas in the northwest of Europe. The region forms a ring of four large urban agglomerations (Amsterdam, Rotterdam, The Hague and Utrecht), as well as a number of medium-sized and smaller towns, such as Almere, Delft, Leiden and Haarlem. These closely linked agglomerations are situated around the green heart of Holland; a green area which provides the region not only healthy fresh air, but also room for agricultural activity, rest and recreation.



Amsterdam Smart City banner by European Network of Living Labs

The Smart Work Centres (SWC) 'centres and systems' model began more than five years ago in Amsterdam, with Cisco Smart Work Centres providing an attractive alternative to working from home. Starting with seven centres in Amsterdam in 2008, Smart Work Centres expanded rapidly to 120 by 2011 (CISCO, 2011).



CISCO Blueprint for smart and connected communities

The model has been adopted across Korea, Singapore, USA, Canada and other European cities.

The success of SWC is intrinsically linked as part of Amsterdam's Connected and Sustainable Work policy framework, which aims to reduce travel time, carbon emissions, make the city greener and improve community lifestyle and wellbeing. A flexible working program with multiple applications, it addresses a wider work, social and economic ecosystem, as opposed to being concerned solely with providing facilities offering cubicles, coffee and connectivity.

Governance, culture and incentives have been the main elements of the success of the set up and business model from the beginning (CUD, 2012). Smart Work Centres are managed by a private sector model, and backed by local and state government. Essentially, it is a public-private partnership with the City of Amsterdam and CISCO Internet Business Group.

Using the best available broadband-enabled, networked collaboration technologies, the information and communication technology (ICT) features a wider cloud of services close to residences for individual and group settings. The CISCO network provides secure ultra high-speed connectivity to any network that workers need to access, including employer or university networks.

The centres' other key components are proximity to transport, shops, services and childcare. They can also function as a community centre for neighbourhoods. Ultimately the vision is for the Smart Work Centres to include citizen engagement, collaboration and community building.

Smart Work Centres give people a choice about whether they need to make the long and congested transport journey into Amsterdam or to a place much closer to home where they can concentrate on work and connect with community.

This innovative way of working has proven to be very popular with professionals and so called knowledge workers, and the younger generation who have grown up with digital technologies are actively choosing to work for companies that encourage smart work practices SDCN, 2013

Productivity gains

Within five years, the City of Amsterdam has (Cameron, L., 2012):

- reduced public service office space in the city by a third
- reduced desk to worker ratio from 1.3 desks per worker to 0.7 desk per worker
- increased time for workers to be in the field, serving the community
- provided savings to the city of over €10 million per annum.

Workers and Businesses	Local Authority	Community
<ul style="list-style-type: none">• Offers economics of scale through sharing centralised facility and technology• Provides a professional infrastructure and business support, stimulating the creation and use of innovative services through new partnerships and business models• Creates an empowered business and social workspace• Fosters worker autonomy and flexibility• Contributes to work-life balance by reducing commute time.	<ul style="list-style-type: none">• Reduces workspace overhead, space requirements, real estate costs, and building operation costs• Creates spaces for people to meet in a person or virtually, for business or social activities• Increases workforce productivity with advanced collaboration tools• Encourages innovation by providing the needed technology, services, and work and life spaces• Reduces traffic congestion.	<ul style="list-style-type: none">• Provides a vision and infrastructure for tomorrow's resilient community, including how work will be done• Facilitates new patterns of work while enhancing economic output, social cohesion, and community attractiveness• Creates competitive, innovative, sustainable work-life environment fostering choice of where, when, and how to work• Lowers ecological footprint through reducing time to travel and better building and energy management.



5. Data collection and approach

The Digital Work Hub Project aims to provide a regional focus to the growing area of research by governments, organisations and individuals, worldwide and within Australia, regarding collaborative workspaces.

The project has investigated via qualitative and quantitative research methods the requirements for a network of digital work hubs in local communities across South-East Queensland (SEQ), to increase productivity and diversity through greater regional employment and reducing travel-related stress.

Specifically this project will assist

- Employers across the regions – greater staff retention and commitment
- Employees of many public and private organisations – better work-life balance
- Regional productivity – through greater regional employment and less travel-related stress
- Reduction in road congestion – fewer vehicles travelling to and from city centres – supporting State government policy of compact and connected regional areas
- Increased sustainability – reduced carbon emissions.

Who will benefit:

- Potential investors in/providers of Digital Work Hub services, who require information about supply and demand factors
- Commercial, institutional and public sector employers who could benefit from offering more flexibility in employee location and reducing inner-city office space requirements
- Town and city planners/developers and transportation services planners/providers who will have new possibilities to address issues such as congestion.

Communication and engagement

A key element of the project was to develop knowledge sharing opportunities and partnerships including forums to garner support for the operation of collaborative workspaces across SEQ. Each research phase during 2013 has been uploaded to www.digitalworkhub.com.au. The project website also provides news about regional events and results, and links to ongoing conversations both nationally and internationally.

As a result of this engagement the Digital Work Hub Project now hosts the SEQ branch of the Sustainable Digital Cities Network. The SDCN is a national organisation exploring the impacts of teleworking and smart work centres on our cities and how they can be a catalyst for revitalising suburban and regional commercial centres. The aim is to use this

platform to work together to create an activation model to support local private operators, government and private organisations.

The *Get Involved* page on digitalworkhub.com.au provides a platform for feedback and to collect commuter stories and local individuals and businesses seeking collaborative workplace environments. It will also house additional tools and information for potential investors, management/operators, employers/employees, entrepreneurs and consultants as they become available.

Market research

A desktop review of the literature and case studies from international and Australian sources informed the scope of the first phase of the research, being the demand market research by EMDA (2013). The primary regions investigated were Sunshine Coast, Moreton Bay, Logan and Redland, Gold Coast and Brisbane.

EMDA economic and market development advisors

Initial market demand assessment

This phase identified the demand and supply opportunities from private and public organisations of the Telework benefits and opportunities in each of the 5 RDA regions. It assessed demographic and travel information including what kinds of worker travel where. Also how many entrepreneurs or consultants work in the region and how many of this group currently travel to work and where. Finally, this established the target markets and initial market potential, being the number and type of employees to whom digital work hubs may appeal.

Several demand streams were identified from the 2011 Census data including:

1. Commuters – main employment outside of region they live in (esp. Brisbane metro). The data was further broken down into public / private sector workers and people who worked from home
2. Residents in region (LGA) who might find working in a Digital Work Hub appealing, including people who work from home. All 476 occupations were assessed and classified into high, medium and low potential, based on the following criteria (each rated 1–5):
 - The extent to which the occupation has flexibility in work location
 - The extent to which the occupation can be classified as a knowledge worker
 - The extent to which there is a requirement of interactivity with coworkers from the same organisation

High potential is defined as an occupation with a score of 13 or more; medium potential from 10–12; and low potential less than 10.

3. Business visitors – including domestic and international overnight visitors to each region.

Concept testing – interviews

The second component comprised of 45 interviews across the key potential target groups (employees/employers and self-employed people) to help understand the attitudes, opportunities and barriers of using digital work hubs across the region with employers and employees – including operational conditions, technological, business development, governance, design, financial, travel savings and commute time, work-life balance – as an alternative to 'at home' teleworking.

1. 24 in-depth interviews with targeted employees/contractors/consultants in the high-medium potential groups across each region in the study area:
 - LGA residents who live and work in their LGA
 - LGA residents who commute to work in the Brisbane metro area
2. 20 in-depth interviews with employers (spread throughout the study area, with a focus on Brisbane metro) who employ high-medium potential target groups.

Economic impact

The third component examined the economic impact of digital work hubs in SEQ. This included direct and indirect employment, economic value-add, social and community impacts including:

- Savings and productivity improvements to the economy and regional development
- Transport savings
- Social impact on family and careers
- Greenhouse gas emissions
- Community – time savings and participation in community activities
- Direct and indirect contributions in terms of value add and employment.

Regional analysis

This stage of the research identified possible locational clusters in each region based on best-case geographical infrastructure requirements, and the SEQ region's wider economic, social and environmental context. This data has been collectively analysed and is visually represented at both the SEQ and regional study area level. Two specific quantitative reports were undertaken.

ANZSOG Institute for Governance report

This institute at the University of Canberra measured the agglomeration of high value economic sectors/knowledge workers in SEQ: *Clustering of knowledge workers in SEQ: Where do they work and where do they live?* (Hu et al., 2013)

Aim To measure the agglomeration of high value economic sectors/knowledge workers in SEQ.

Data ABS 2011 Census data of population based on Place of Usual Residence and Place of Work.

Spatial Units Regional areas in SEQ: Sunshine Coast, Moreton Bay, Brisbane, Gold Coast, Logan, Redland, Ipswich, and Toowoomba.

Measures

1. Numbers of knowledge workers living and working in each regional area
2. Agglomeration of knowledge workers living and working in each regional area, using the technique of location quotient (LQ) for regions in the study area.

Definition of knowledge workers

Knowledge workers are defined respectively as:

- People working in knowledge-intensive industries, including Information Media and Telecommunications; Financial and Insurance Services; Rental, Hiring and Real Estate Services; and Professional, Scientific and Technical Services, according to the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006
- People working in highly-skilled occupations, including Managers and Professionals, according to the Australian and New Zealand Standard Classification of Occupations (ANZSCO) 2006.

SGS Economics & Planning report

This report (SGS, 2013) investigated the impact of additional residents and jobs in regional centres and the net benefits (infrastructure, land, transport) of moving toward more compact cities supported by better transport linkages.

1. Maps of population and employment locations in SEQ (2013)
2. Altered maps transferring some residents/ jobs into selected regional centres (2013)
3. Table of jobs and employment broken down by inner, middle and outer rings under both 1 and 2
4. Identification, description and broad scale quantification of benefits generated by moving from 1 to 2.
 - a. Infrastructure savings
 - b. Land savings
 - c. Transport cost savings
 - d. Environmental benefits
 - e. Agglomeration benefits
5. Summary of previous studies highlighting net benefits of moving towards more compact cities supported by better transport linkages.

Regional Commuter Flows Across SEQ

The Sunshine Coast

8647 Sunshine Coast residents commute to other SEQ regions for work each day. Most travel to Brisbane and Moreton Bay.

Moreton Bay

73,984 Moreton Bay residents commute to other SEQ regions for work each day. Most of these commuters travel to Brisbane.

Brisbane

43,563 Brisbane residents commute to other SEQ regions for work on a daily basis. Most commute to Logan, Moreton, Ipswich and Redlands.

Redland

31,021 Redland Bay residents commute to other SEQ regions for work daily with most commuting to Brisbane.

Ipswich

28,700 Ipswich residents commute to other SEQ regions for work each day. A large proportion of these commuters travel to Brisbane.

Logan

58,098 Logan residents commute to other SEQ regions for work each day. A large proportion of these commuters travel to Brisbane.

Gold Coast

23,686 Gold Coast residents commute to other SEQ regions for work each day. Most of these commuters travel to Brisbane and Logan for work.

6. SEQ Competitiveness in the digital economy

Telework will be one of the biggest structural changes to the labour market this decade Deloitte 2012, p iii

Australian context

Telework initiatives within and across federal, state and local government support the agreed policy directive for sustainability, transport, decentralisation and digital network including the 'virtualisation of the Private Cloud' (SOT, 2012, p 38). With the National Broadband Network (NBN) rollout and wireless technology, collaborative, connected and accessible urban and peri-urban structures will be enabled.

The Australian Government has committed to supporting 12% of the public service to be regularly teleworking by 2020 (Digital Economy Strategy, 2011). However, at this stage there is no policy directive that includes working from a digital work hub, as they are not broadly established.

Australia lags behind comparative OECD countries in telework uptake and infrastructure (University of Melbourne, 2012). Uptake in Europe and North America is increasing rapidly; more recently Asian countries, such as Korea, are establishing different telework arrangements and systems. In 2010, the US Federal Government passed an Act that required each agency to establish a policy under which employees may be authorised to telework to the maximum extent possible without diminishing employee performance or agency operations.

Minister for Communication, Malcolm Turnbull addressed the Telework Congress, as part of Telework week, November 2013:

The Telework Kit also draws attention to the growing international interest ... particularly from the Netherlands, South Korea and Singapore ... in multi-purpose 'smart work hubs' to bring work closer to where people live, as an alternative to teleworking from a home office. These hubs combine secure spaces for employees to telework to their main office with more public areas for co-working.

South East Queensland

The Council of Mayors 'Priorities for South East Queensland' June 2013 report outlined immediate telework/digital work hub opportunities that can be funded within SEQ. With the experiences and lessons of SEQ behind them, the Federal Government has an evidence base on which to plan a national rollout (p 30). The Council of Mayors' priorities provide:

- Positive impact on the economic development of the region with national relevance.
- Collaboration with RDA to provide funding for telework centre trial. (Telework and Digital Futures Project est. cost \$4 million)

Queensland

Queensland Digital – Draft Queensland Digital Economy Strategy (Department of Science, Information Technology, Innovation and the Arts Queensland, November 2013) proposes the state to be:

Australia's most digitally interactive state and recognised globally as a digital innovation hub.

Focus areas for feedback include:

- flexible work centres to increase productivity
- collaboration and work–life balance
- improving the digital capability of businesses.

The recent *Draft Queensland Plan 2013* identified key focus areas per region, including managing urban sprawl and growing regional areas. The SEQ region faces a number of challenges related to rapid urban growth. Covering increasingly connecting strips of urban and peri-urban coastal development, inland farming centres and the state capital of Brisbane, SEQ is one of Australia's highest growth areas. With a current population of 3.1 million, SEQ is predicted to grow by an extra 1.5 million residents, reaching 4.6 million by 2031 (Australian Government, 2013).

This presents significant infrastructure challenges, particularly in roads and transport costs, pollution and labour productivity losses from commuting. Regional commuter flows across SEQ are shown in the graphic on page 14 (ABS Census, 2011 & EMDA, 2013), which shows commuter volumes and crossovers in the region.

Regional community skill mixes are changing with incoming sea/tree changers who 'choose where you live rather than where you work', driven by lifestyle and affordability

However, significant opportunities for regional growth are also presented with the current rollout of high-speed broadband infrastructure. As part of the National Broadband Network, new wireless networks are offering capabilities in cloud computing, mobile business profiles, and videoconferencing. These applications are opening up a range of cost saving and entrepreneurial opportunities for employees, small businesses, freelancers and knowledge workers to 'work from anywhere', reducing and changing patterns and amounts of commuting across the region. Collaborative, flexible workspaces such as curated digital work hubs in regional locations will help to retain these workers in their communities building: export income, demand for support services, creating jobs, transferring skills, supporting innovation and entrepreneurship, and improving health and wellbeing.

REGIONAL WORK COMMUTERS Into Brisbane

Total
190,842

BREAK DOWN:

Australian Gov: 8,924
State Gov: 27,326
Local Gov: 2,210
Private Sector: 152,382

37%

Total
70,631

MORETON BAY BREAK DOWN:

Australian Gov: 4,165
State Gov: 12,116
Local Gov: 975
Private Sector: 53,375

24%

Total
46,977

LOGAN BREAK DOWN:

Australian Gov: 1,681
State Gov: 5,484
Local Gov: 590
Private Sector: 39,963

14%

Total
26,379

REDLAND BREAK DOWN:

Australian Gov: 1,045
State Gov: 3,673
Local Gov: 300
Private Sector: 21,361

14%

Total
26,220

IPSWICH BREAK DOWN:

Australian Gov: 1,054
State Gov: 3,666
Local Gov: 264
Private Sector: 21,236

8%

Total
15,447

GOLD COAST BREAK DOWN:

Australian Gov: 685
State Gov: 1,685
Local Gov: 92
Private Sector: 13,012

3%

Total
5,188

SUNSHINE COAST BREAK DOWN:

Australian Gov: 316
State Gov: 755
Local Gov: 43
Private Sector: 4,074



SOURCE ABS CENSUS 2011 & EMDA 2013

Brisbane

From the telework-from-home experience, a collaborative-workspace-centre approach has developed. During 2011-12 media reports and business conferences (Asia Pacific Cities Summit) endorsed the practice and opportunity of smart work centres – as part of the Brisbane centres policy (Queensland Government, 2009) – with a goal to reduce traffic and carbon outputs, similar to the Amsterdam Smart City concept. Political advocacy (at local and state government level) has included establishing such centres adjoining regional offices and libraries.

Opportunities for smart work centres were articulated in the *Brisbane Economic Series* (March, 2012) as part of required investment in infrastructure in the digital economy to build economic resilience and sustainability. The Amsterdam model of Smart Work Centres was endorsed as the working model for SEQ with a focus on creativity, inclusion, innovation and sustainability as the key elements of successful cities into the future (Stewart-Weeks, 2012).

Central to the new demands to build resilience and sustainability into the heart of Queensland's cities, towns and regions is the imperative to invest in the human and technology fabric of the digital economy M Stewart-Weeks, 2012, p 9

Further in 2013, the newly elected MP for Fisher Mal Brough in his maiden speech to parliament outlined issues with the NBN and raised the question regarding decentralisation of government workers as part of a flexible work model.

To the challenges of broadband. It is a necessity. It is going to be crucial. The data era will offer opportunities and jobs for places like the coast. We can consider having some of our bureaucrats, state and federal, working from home, part time, full-time, in the regions, decentralising our workforce and taking away some of the congestion issues because we will have the data capacity.

The *Digital Brisbane Strategy* identifies an action to:

Promote and develop the network of public digital workspaces available for mobile workers – develop knowledge hubs in strategic locations that can be used by business and other commuters to undertake work and meetings without having to commute to the CBD (DBS, 2013)

Benefits from digital work hubs located outside Brisbane include reduction in traffic congestion and emissions pollution, particularly where residents from outside Brisbane commute daily to jobs in the CBD – even if only 2–3 days a week. While the Digital Work Hub Project primarily addresses the establishment of digital work hubs in locations outside of the Brisbane Local Government Area, scope exists in outlying areas of the city, including those suburbs serviced by high speed broadband such as Aspley at the city's northern outskirts – one of Australia's first NBN roll-out sites – located on a major arterial road connecting to the Moreton Bay region.

Public/private organisations and individuals are questioning, 'is work about what you deliver or how much time you spend in the office?'

The digital revolution is changing how we relate to one another and share through technology; the diverse range of work available, how we balance family, friends and community, and vitally, how we respond to growing transportation, accessibility and infrastructure funding nexus

Innovation through collaboration

Another aspect of digital work hubs explored by this project involves innovative coworking spaces. These spaces are typically located in inner city areas and are frequented by workers from large companies alongside smaller, entrepreneurial operations in a facilitated environment to encourage collaboration, learning and innovation. The Hub Australia model provides inner city spaces and forms a larger community of hubs linked internationally. Such hub centres exist in Melbourne, Sydney and Adelaide.

Brisbane is committed to a business innovation culture, with Brisbane Marketing (Council's economic development delivery arm) producing an annual Innovation Scorecard which measures and showcases the city's innovation. The city is therefore well positioned to host a major innovation coworking space, for example at Skygate near Brisbane Airport. Current examples are River City Labs which is a coworking space for digital start-up companies and a more ad hoc coworking set up at The Edge located at the Queensland State Library.

7. Research, trends and opportunities for SEQ

What does recent research tell us about future opportunities for SEQ?

The concept of the Anywhere Working City is a highly liveable polycentric mega polis driven by societal expectation of a different way of working, shopping and living, and enabled by new architectures of building, technology and transport

Microsoft White Paper, *The Anywhere Working City*, 2012

Public policy challenges

The digital economy is informing the physical shape of our cities and regions. At *The Sustainable Digital Cities Forum* (University of Technology, Sydney, 1 August 2013), Martin Stewart-Weeks, director of CISCO International Business Solutions Group, argued that cities and regions depend on the quality and interaction between commerce, creativity and community and that digital disruption has affected each individually. **The challenge he highlights lies in how we facilitate technology to the contours of our urban structure and how people want to live and work.**

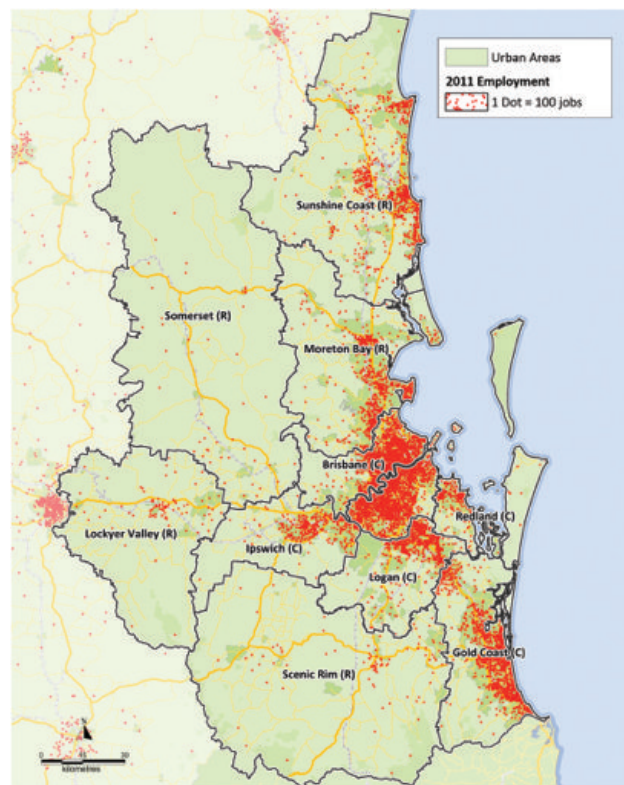
Public policy challenges arising from this trend include:

- The digital economy and the development of new business models to meet the challenges arising from digital disruption
- Regional development infrastructure and transport planning
- Population growth and the planning of major cities
- Employment participation and distribution
- Health and wellbeing.

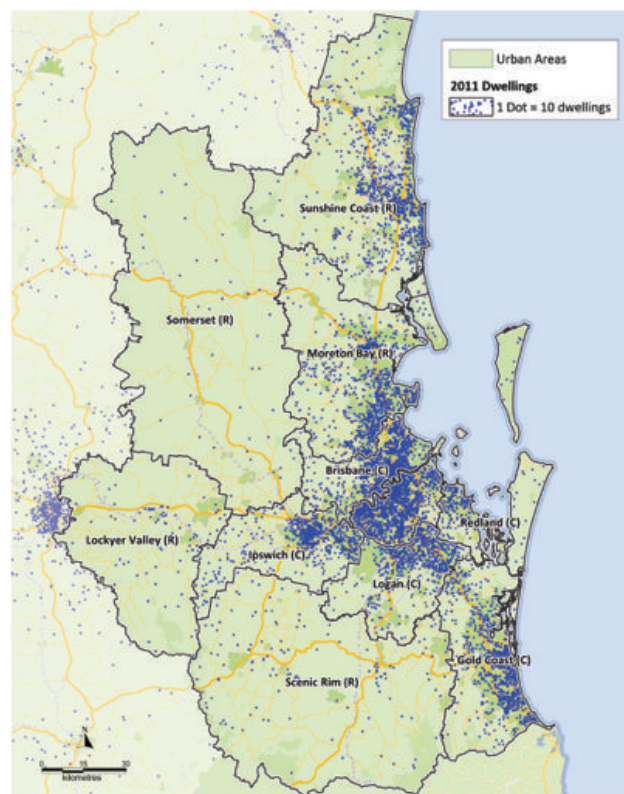
Economic urban agglomerations

What are they and why are they important? The ability to quantify the benefits of agglomeration is giving greater argument for the economic development of activity centres (Trubka, 2009). Research consistently demonstrates the value of town and activity centres in the function and productivity of cities (Trubka et al., 2012; Daley et al., 2011).

- Cities are the best example of economic agglomerations with businesses clustering together to increase productivity and leverage resources
- The benefits of agglomeration are further increased where there is a higher density of employment and dwellings, connected to transport
- Agglomeration economies typically involve knowledge sharing, labour pooling and input sharing (SGS Economics and Planning, 2012, 2013).



Current distribution of jobs
(SGS Economics and Planning, 2013)



Current distribution of dwellings
(SGS Economics and Planning, 2013)

Aggregate performance

	% Land	% Dwellings	% jobs
Sydney	2	22	47
Melbourne	2	13	45
SE Queensland	1	8	38
Sydney (excl. CBD)	2	19	29
Melbourne (excl. CBD)	2	11	26
SE Queensland (excl. CBD)	1	8	27

SEQs centres are underperforming in terms of their accommodation development (SGS Economics and Planning, 2013)

Aggregate performance in SEQ is under the national average and under Sydney and Melbourne, which are also suffering the productivity shortfalls of decades of urban sprawl (see Table above).

Nomadic workers looking for workspace between head office and home will use innovative third space hubs at networked foci around the city and beyond

Microsoft White Paper, *The Anywhere Working City*, 2012

Knowledge intensive clusters

A city which separates knowledge economy elites from blue collar or service workers – including key workers in health, education or police – by 60+ minutes commutes and a widening affordability gap, will not be as productive or successful as a more mixed and integrated urban form

Committee for Sydney Report, May 2013, p 18

As illustrated in the recent Grattan Institute *Productive Cities Report* (Kelly and Mares, 2013) most of the knowledge-intensive activities are found in Australia's major cities and to a lesser extent in other regional employment centres. As a result, high-value knowledge jobs are clustering in the city forcing up housing prices within 15 km of the workplace. Knowledge workers with higher incomes prefer to pay for highly serviced inner city precincts with access to attractive lifestyle benefits and reduced commuting time. Increasingly, places with high value jobs do not have enough affordable housing.

Concurrently, affordable housing stock is developing in the outer suburban and peri-urban regions. The report emphasises that these Greenfield areas with new housing lack access to high value employment sectors, impacting the social and labour market and can entrench low income households. The report recommends increasing these proportions from both sides, bringing jobs closer to people and people living closer to jobs, and by improving

the transport links between them (Kelly et al., 2013:36). Connectivity and accessibility are important regional planning elements to improve the regressive connections between housing affordability, socio-economic opportunities and car dependence (Dodson & Sipe, 2009).

Knowledge worker distribution in SEQ – ANZSOG Report (2013)

As there is no defined category in the ABS Census 2011 for knowledge workers, this study used the measurements 'highly skilled' and 'knowledge intensive industry' workers defined in the Glossary, p 1 and on p 13.

With a population of 1,041,840, in the 2011 Census, Brisbane provided 251,148 jobs to skilled workers for 224,697 skilled workers living in the city. By contrast, Moreton Bay provided 25,200 jobs to skilled workers for 46,549 skilled workers living in the region – 21,349 skilled workers left Moreton Bay to work elsewhere (primarily Brisbane) each day (ANZSOG, 2013) – see info graphics p 20 and p 22.

A similar pattern exists for other regions in this study with specific variations for each. Skilled workers and knowledge intensive industry workers are discussed in the regional case studies which follow.

The location quotient national competitiveness matrix on p 21 assesses where knowledge workers and highly skilled workers Live and Work within the study area.

Only Brisbane performs above the national average for highly skilled workers living within the region in which they are employed. The Gold Coast is closest to the national average: knowledge industry workers (live) 0.95 and (work) 0.97; highly skilled workers Live 0.87 and Work 0.89.

From the location quotient graphs on p 21 it is clear that strategic needs and opportunities for digital work hubs are required to be met in Moreton Bay, Ipswich and Logan, and to a certain extent the Sunshine Coast. As expected, commuter suburbs of Moreton Bay, Logan and Redland experience the largest proportionate loss of skilled workers from their regions. However, net exits of skilled workers from Ipswich, the Gold Coast and Sunshine Coast remain significant opportunity losses. As the case studies show, retention of skilled workers in these regions will contribute significantly to their gross regional product, direct and indirect employment, innovation and social capital.





Skilled Workers: Where they live & where they work

Note: Skilled workers refers to people working in highly-skilled occupations, including Managers and Professionals, as defined by the Australian and New Zealand Standard Classification of Occupations (ANZSCO) 2006.

Sunshine Coast







Sunshine Coast

Working Population 105,752

 live here	40,887
 jobs exist here	33,630
 live + work here	32,129
 go out for work	8,759
 come in for work	1,501
 net difference	-7,257






Moreton Bay

Working Population 89,450

 live here	46,549
 jobs exist here	25,200
 live + work here	18,652
 go out for work	27,897
 come in for work	6,548
 net difference	-21,349

Brisbane







Working Population 632,013

 live here	224,697
 jobs exist here	251,148
 live + work here	187,630
 go out for work	37,067
 come in for work	63,518
 net difference	+26,451

Moreton Bay

Redland

Working Population 35,461







 live here	19,389
 jobs exist here	10,146
 live + work here	7,040
 go out for work	12,349
 come in for work	3,106
 net difference	-9,243

Brisbane

Redland

Gold Coast

Working Population 184,583







 live here	68,874
 jobs exist here	57,159
 live + work here	50,163
 go out for work	18,511
 come in for work	6,996
 net difference	-11,715

Ipswich

Logan

Ipswich

Working Population 50,891

 live here	16,791
 jobs exist here	14,047
 live + work here	7,658
 go out for work	9,133
 come in for work	6,389
 net difference	-2,744

Logan

Working Population 73,592

 live here	27,604
 jobs exist here	10,142
 live + work here	7,040
 go out for work	12,349
 come in for work	3,106
 net difference	-9,243

Gold Coast

SOURCE ABS CENSUS
2011 & ANZSOG 2013

If our policy settings remain unchanged, our cities will continue to polarise, as residents are increasingly sorted into different suburbs based on income and qualification levels Kelly et al., 2013, p 35

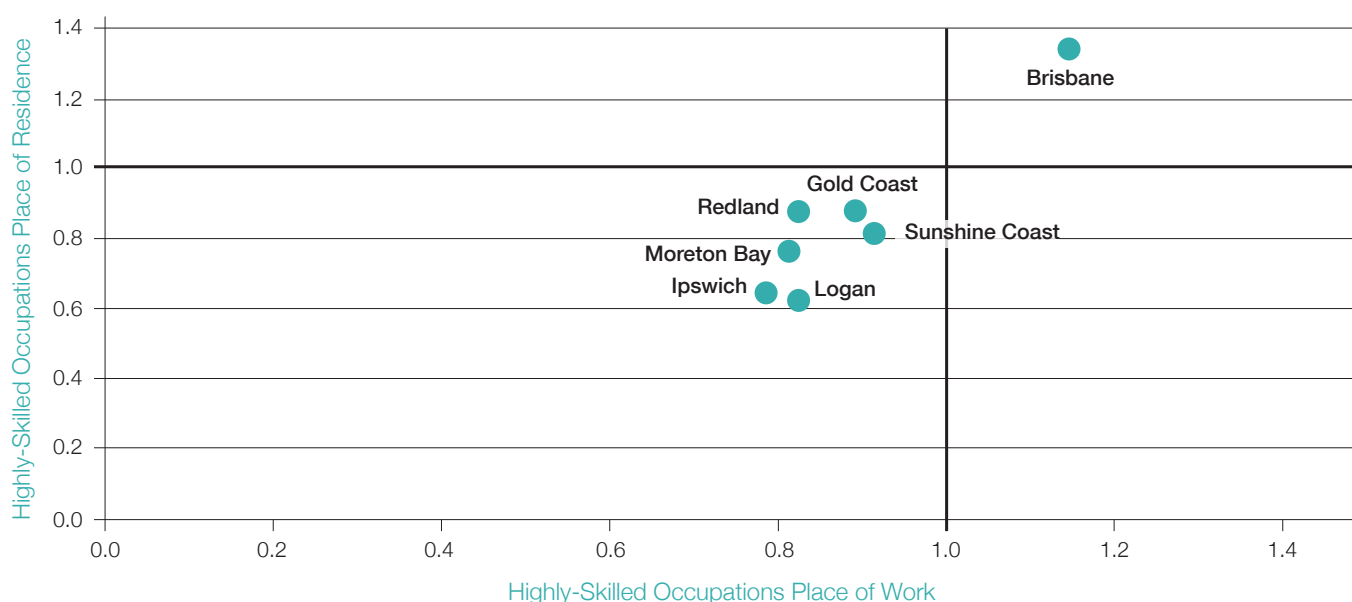
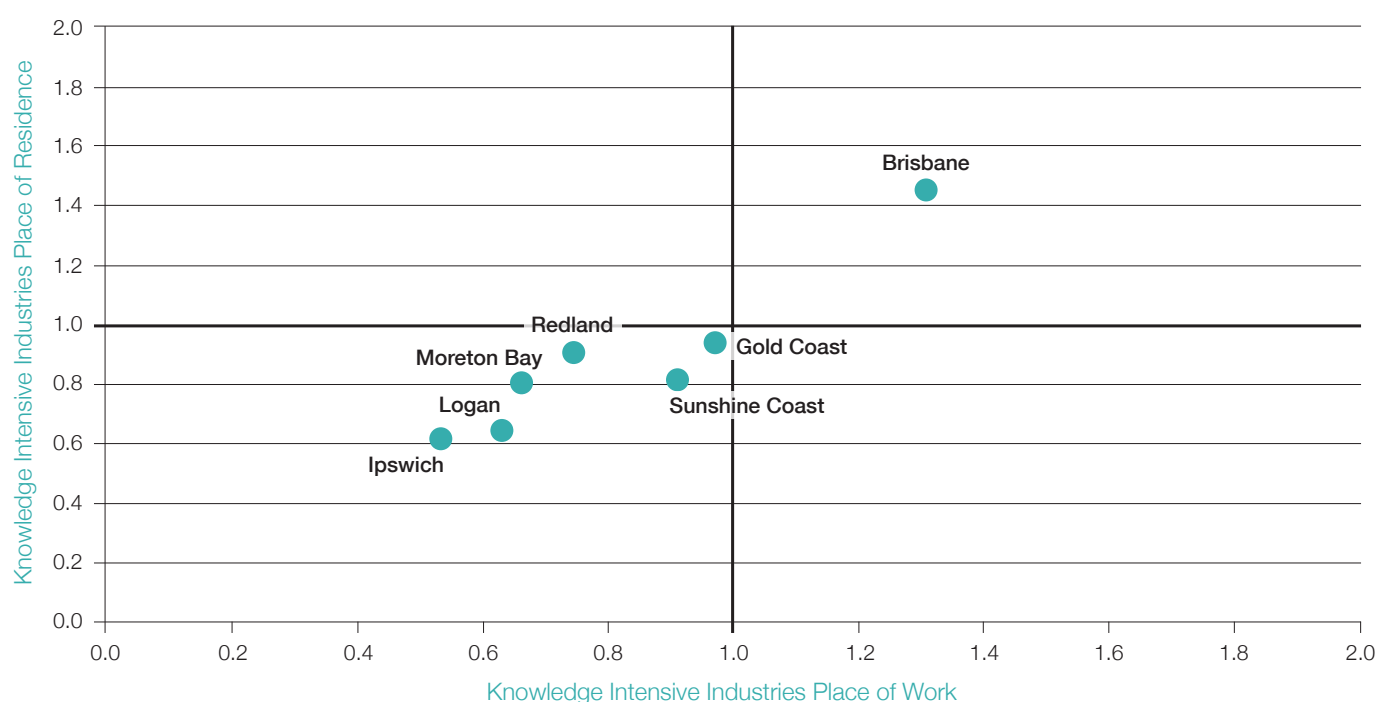
Note: It important read the figures in each region in isolation. The figures include skilled workers who travel outside SEQ and skilled workers leaving and entering SEQ regions to work so cannot be aggregated.

How to distribute high value sector jobs across the region without lowering productivity through decentralisation?

The key question remains in how to improve the spatial distribution of high value sector jobs and direct economic benefits across SEQ, without the evidenced lowering of productivity that can occur with decentralisation.

(Australian Government, 2013; Kelly et al., 2013)

Past evaluations of Australian efforts have indicated that performance is often found to fall short of targets (Productivity Commission 2012, pp 86–87) and the effect on the whole economy is unclear. The multiplier effect works in both directions, with new jobs in one area taking jobs from another. The Active Work Model, where commuters work 2–3 days a week in a local digital work hub (both peri-urban and regional), has the potential to ameliorate severe impacts on commuters' destinations. It also serves to increase jobs, skills and innovation through face-to-face collaboration in flexible work centres across SEQ.



Location Quotients for Residence and Place of Work (Hu, R., Carmody, L. and Allen, S., ANZSOG Report, 2013)







Knowledge Workers: Where they live & where they work

Note: Knowledge workers refers to people working in people working in knowledge-intensive industries, including Information Media and Telecommunications; Financial and Insurance Services; Rental, Hiring and Real Estate Services; and Professional, Scientific and Technical Services, as defined by the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006.

Sunshine Coast

Sunshine Coast







Working Population 105,752

 live here	16,465
 jobs exist here	14,021
 live + work here	13,575
 go out for work	2,890
 come in for work	446
 net difference	-2,444

Moreton Bay







Moreton Bay

Working Population 89,450

 live here	19,976
 jobs exist here	8,558
 live + work here	7,157
 go out for work	12,819
 come in for work	1,401
 net difference	-11,418

Brisbane







Working Population 632,013

 live here	101,163
 jobs exist here	120,558
 live + work here	90,444
 go out for work	10,719
 come in for work	30,114
 net difference	+19,395

Brisbane

Redland







Working Population 35,461

 live here	8,299
 jobs exist here	3,843
 live + work here	3,142
 go out for work	5,157
 come in for work	701
 net difference	-4,456

Ipswich

Gold Coast







Working Population 184,583

 live here	31,443
 jobs exist here	26,179
 live + work here	24,000
 go out for work	7,443
 come in for work	2,179
 net difference	-5,264

Gold Coast







Ipswich

Working Population 50,891

 live here	6,925
 jobs exist here	3,943
 live + work here	2,756
 go out for work	4,169
 come in for work	1,187
 net difference	-2,982

Logan

Working Population 73,592

 live here	12,031
 jobs exist here	6,731
 live + work here	3,986
 go out for work	8,045
 come in for work	2,745
 net difference	-5,300

SOURCE ABS CENSUS
2011 & ANZSOG 2013

**Economic benefits – SGS
Economics and Planning
Report (2013)**

What are the economic benefits of facilitating a greater proximity of housing and job development within the local government areas of SEQ?

The future spatial distribution of population and employment will shape commuting patterns in SEQ, which in turn has ramifications for future congestion and infrastructure investment. The current distribution of employment and dwellings are clearly linked with the centrality of location in SEQ (SGS Effective Job Density Index Map).

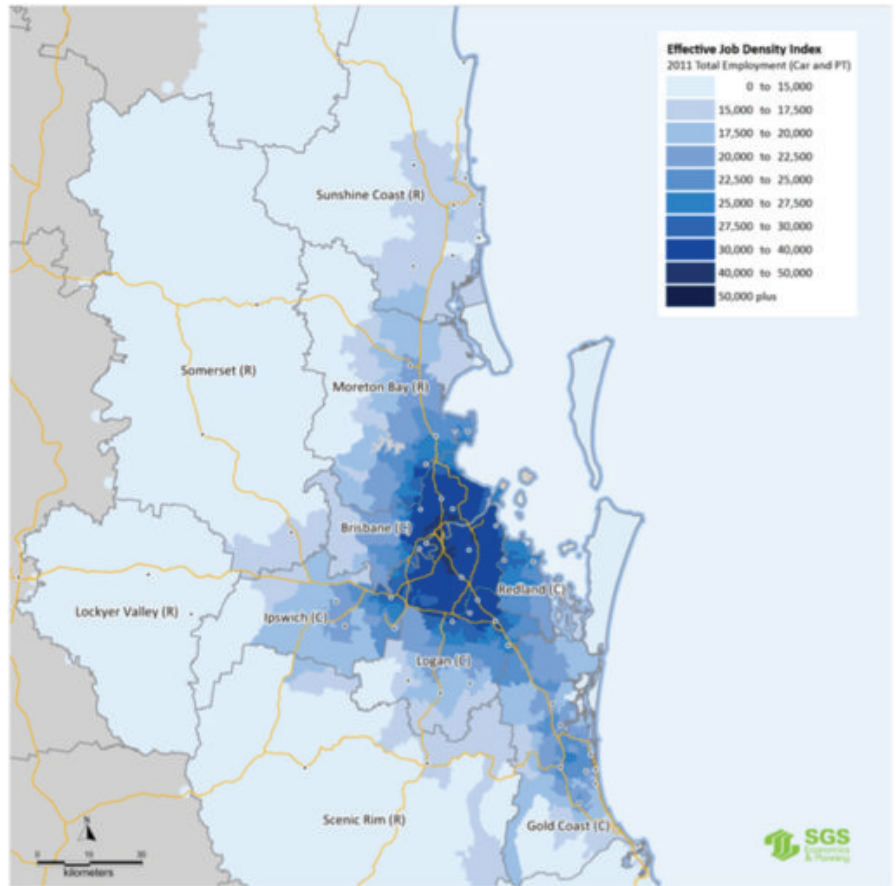
This imposes large costs on those residing in outlying locations: the further away you are from the city the greater the disadvantage. Currently SEQ centres accommodate less than 10% of dwellings and less than 40% of jobs.

The report explores a centre's productivity boost for the entire region if more jobs, dwellings and services were provided via a redeveloped urban environment rather than a Greenfields urban environment.

The findings were based on the scenario of a centres policy in the SEQ Regional Plan, 2009–2031 (Queensland Government, 2009) that directed a further one, five or 10% increase in dwellings and jobs across identified SEQ town activity centres over the last 20 years.

The report measures likely accumulated savings generated (order of magnitude not precise estimates) through residences developing in existing urban and regional centres rather than Greenfields sites.

Each new dwelling developed in an urban or regional centre results in savings of up to \$85,300 otherwise required to service infrastructure costs (education, health, police, roads, electricity, water, sewerage, fire, ambulance, electricity, gas, telecoms) in Greenfields or urban fringe developments.



Effective Job Density Index (SGS Economics and Planning, 2013)



Activity Centre Types (SGS Economics and Planning, 2013)

Broad scale savings estimates (\$million) from more jobs and dwellings in Centres

	1% more jobs and dwellings in Centres	5% more jobs and dwellings in Centres	10% more jobs and dwellings in Centres
Non-urban land savings (once off)	\$23	\$114	\$227
Infrastructure efficiencies (once off)	\$275	\$1376	\$2,751
Transport savings (Annual benefit)	\$12	\$59	\$117
Agglomeration economies (Annual benefit)	\$147	\$734	\$1,469
Total	\$456	\$2,282	\$4,565

SGS Economics 2013 (ABS Census data, 2011; Trubka, Newman & Bilsborough, 2010)

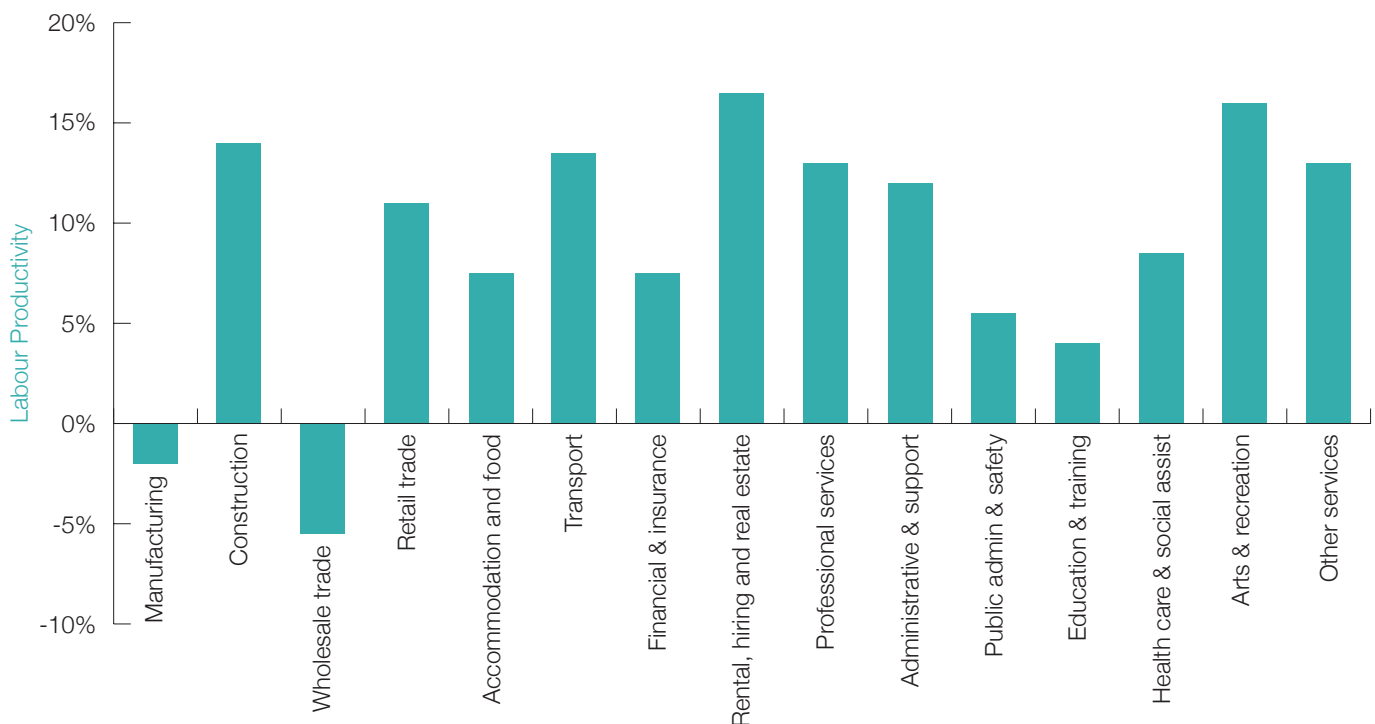
If SEQ centres (excluding Brisbane CBD) accommodated 10% more highly skilled jobs growth, an extra \$3 billion one-off benefit would be generated, plus ongoing benefit of ~\$1.6 billion pa.

The once off non-urban land savings and infrastructure efficiencies and annual transport and agglomeration benefits are outlined in the summary broad scale estimates in the table above.

The SGS Report (2013) identified labour productivity improvement by industry linked with a doubling of Effective Job Density (employment capacity vs time to work) see bar chart below.

A network of digital work hubs across SEQ would contribute to this result through:

- Facilitating behavioural change to telework with significant regional impacts
- Superseding debate about centralisation vs decentralisation
- Providing good prospects for private sector delivery/ participation
- Improving local centre amenities, teleworker and volunteer exchanges
- Increasing labour force participation, especially skilled women and the disabled
- Building small and medium enterprises networking and capacity development (and innovation).



Labour productivity improvement by industry linked with a doubling of Effective Job Density by moving dwellings and jobs to Centres

The land and transport planning question

SEQ's future spatial distribution of population and employment will shape future spatial patterns of commuting in the region, which will in turn have ramifications for future congestion and infrastructure investment Australian Government, 2013, p 11

The SEQ region is expected to remain one of the fastest growing regions in Australia and currently lacks quality, networked and accessible public transport in many regional areas outside the inner Brisbane metro. Regardless of the impact of telework and digital work hubs on transport infrastructure requirements, transportation is an integral component of city building and regional planning. When integrated with employment and dwelling density, transport greatly influences the quality and economic vitality of a region (Mees et al., 2011; Kelly et al., 2012; 2013; Stevens & Buksh, 2012). The 2013 *State of the Regions* report highlighted government investment in transport infrastructure as a key mechanism to build the Australian economy and its regions after the mining boom (National Economics, ALGA 2013).

If current trends continue, there will be greater commuter flows from the outer regions into Brisbane. This will continue to challenge building public transport mode share and reducing congestion and commuter times on major road arterials. Transport infrastructure will be further impacted by residential and job growth trends in SEQ as a whole, not being concentrated around frequent public transport – even though progress was made in specific locations (Australian Government 2013; SGS 2013).

Market research for digital work hubs in SEQ – EMDA (2013)

The EMDA research report establishes the 2011 ABS commuter patterns and demand streams in SEQ, and illustrates the imbalance in commuter flows within the region. The total number of workers from all study regions (LGAs) who commuted to Brisbane metro each day for their main location of work was 190,842. This is further broken down into public and private sector workers as shown in the Commuter Flow Into Brisbane map on p 16.

Further, the EMDA study identified approximately half of the commuters from each region who travel to Brisbane work in the inner city area; namely 2700 (of 5188 commuters) from the Sunshine Coast, 30,000 commuters from Moreton Bay, and 7498 commuters from the Gold Coast. **There is also significant daily criss-cross of workers into other LGAs** (see Regional Commuter Flows Across SEQ map p 14), including Brisbane residents who commute to the surrounding regions.

Preliminary summary table

The table on p 26 is a summary of the current demand and potential for digital work hub based on two key focus areas:

1. Workers who commute to Brisbane
2. People who live and work in the region.

It highlights the demand potential for digital work hubs from each stream within the LGAs, but does not include domestic and international business travel in each LGA region.

Even if our work-related journey habits change in character, we will still need to move about the city and gather in workplaces Kelly et al., 2013, p 10

Across SEQ the challenge remains in achieving the balance between strengthening the connection of major inter-regional transport routes for continued economic diversification, **and** improving *accessibility* of local transport networks to connect people with major activity centres, health and knowledge hubs as well as recreational and cultural precincts. Such levels of proximity are crucial in knowledge intensive service-oriented economies.

It is therefore simplistic to assume that digital work hubs or teleworking will provide a quick fix to the issue of transport infrastructure provision. It is not an AND-OR argument. The most significant opportunity for transport infrastructure in the digital work hub framework is the impact these innovation clusters will have *with* achieving a greater distribution of targets across transport modes with the **change of commuter patterns**. That is, not everyone will be going in the same direction to Brisbane, which has a finite congestion load, but criss-crossing locally and centrally across a range of time.

The opportunity for people to work closer to home for part of the week, facilitated by the changing nature of work (Active Work Model) provides opportunity to strengthen local transport networks and infrastructure, take the load off peak time travel into the inner city of Brisbane and improve the health and wellbeing of individuals and the communities they live in

LOCAL GOVT AREAS	Stream 1: HIGH potential commuter to Brisbane LGA	Stream 1: MEDIUM potential commuter to Brisbane LGA	Stream 2: Live and work in LGA HIGH potential	Stream 2: Live and work in LGA MEDIUM potential	TOTAL
Gold Coast	726	1,741	3,140	8,901	14,508
Sunshine Coast	207	630	1,558	5,259	7,654
Moreton Bay	2,529	5,631	950	2,434	11,544
Redland	823	2,193	391	1,014	4,421
Logan	1,514	2,945	570	1,339	6,368

Source: Economic and Market Development Advisors (EMDA), Melbourne (2013).

Governance

The proposed network of digital work hubs across SEQ is based on a **systems model**, both with the distinctive requirement for curation within its management but also as a platform for city and regional building. Successful transportation network models in Australia and internationally also include these principles. **Network planning** is important first as an overall strategic governance arrangement in spatial planning, and secondly as a management mechanism. Combining regional digital and transport network planning under the same systems model leads to unexpected synergies and spinoffs in regional development.

Workforce participation

Knowledge workers are engaged in the acquisition, analysis and distribution of information. Workforce participation of knowledge workers is a public policy and investment strategy that has wider economic and social benefits across the city, fringes and regional centres.

Social drivers of the Active Work Model are around social inclusion, double income families, single parent participation, retirees and for people disadvantaged by disability and carer responsibilities. A major beneficiary of this emerging flexible work is women with children or carer responsibilities. While men are increasingly working in a flexible environment around children, the majority of this still resides with women.

- Provides a narrower spatial area where women with children can reasonably work
- Flexible arrangements necessary for women and men with carer responsibilities, people marginalised by distance, and those with disabilities
- Teleworking from home – isolation, leverage within the hierarchy of the workplace, wage negotiation and billing issues
- Female labour participation rate in Australia is low.

It is estimated that if Australian women did as much paid work as women in Canada, Australian GDP would be \$25 billion higher (Kelly et al., 2013).

The importance of female workforce participation to GDP is increasingly recognised in East Asia. For example, *The Smart Work Centre Program* in South Korea (2011) is largely framed around increasing women's participation in the workforce after having children or more importantly enabling women to choose to have children and a career.

Digital work hubs are more than an employment issue; productivity gains are also reflected with increasing connections as part of a better work–life balance, innovative entrepreneurial activities and community engagement. As highlighted in a 2012 study:

Money isn't the biggest lure for returning to work. Half of those surveyed who work say the teamwork and camaraderie of colleagues is the most important part of their job, while 47% cite intellectual stimulation. Salary comes in third, closely followed by making a difference

Cosima Marriner, *Daily Life*, 18 November 2012

An often overlooked driver for many regional communities is the benefit for youth to be around knowledge intensive sectors, both in an aspirational and mentoring capacity and an opportunity to return or stay within regional areas in their profession of choice.

With the business mix in regional areas changing towards value-added services, knowledge intensive firms need access to a skilled workforce. Due to a multiplicity of reasons, including lower population, cultural diversity and wage levels, SEQ is challenged in attracting highly skilled workers needed to expand local businesses.

Promoting lifestyle opportunities, mobility, creativity, diversity, environmental values and sustainable communities in SEQ regions – without extended commutes to Brisbane – can partially offset this. Contributing to regional growth, curated digital work hubs occupied by motivated highly skilled workers can provide a rich surrounding precinct and wider economic ecosystem from which local populations can learn, connect, develop latent talent, innovate and grow.

The health and wellbeing nexus

The productivity, transport, agglomeration, infrastructure, participation, density and design argument concludes with the impact that all of these elements play on individual and community wellbeing. Combined they provide an important part of the structure that enable people to live healthy and fulfilling lives (University of Melbourne, 2012).

The health metric makes the case for liveability that has been undermined by the pattern of low density housing, at a distance from jobs and services. This is evident from the accelerating incidence of diseases such as obesity and diabetes, and mental health issues such as stress, anxiety and depression across Australia (Australian Government, 2009). Social connection is crucial to wellbeing. Through social connections we share skills, information and resources and this makes communities more dynamic and resilient (Kelly, 2012).

The opportunity for the RDA Digital Work Hub initiative as part of a wider platform addressing these public policy challenges is the increase in opportunity for people to connect, and to reduce the time that people need to spend travelling.

The Digital Work Hub concept image on p 7 provides a plan for the co-location of private, non-profit and government organisations to harness the value within local communities and build social capital.

This connection provides not only benefits in terms of a person's time in dollar value of labour but across health infrastructure, while growing local economies and creating additional demand for services including sectors such as education, training, ICT, legal and accounting.

Further, as in the Amsterdam Smart Work Centre model, it forms an integral part of the connected urban policy packaging platform. Connected, accessible local urban environments increasing the health and sociability of the community, addressing environmental issues, and raising the participation of knowledge workers across the city/regions activity centres (CUD, 2012).

EMDA modelling (2013) quantified the **regional productivity, and the social and community gains for each of the study areas**. Benefits of high and medium potential users of digital work hubs are further quantified in the regional study areas on the following pages in terms of cost savings, job and capital creation for each study region using standard econometric modelling.

While the assessment focussed on creating dollar value-add based primarily on direct jobs creation, the additional health and wellbeing from reduced commuter stress, time to exercise and time available to spend volunteering in community contributes further assets to the region, with quantifiable benefits outside the scope of this work.

Importantly however these benefits are totalled using individual measurements of hours saved, carbon emissions saved, accidents saved and additional time in the community.



8. Conclusions and Recommendations

How does the digital work hub initiative impact?

- When combined with lifestyle choices of knowledge workers, co-location of businesses in regional digital hubs will contribute significantly to regional agglomeration strategies aimed at reducing the economic divide between cities and regional centres, allowing knowledge industry workers and highly skilled workers to work where they live (Location Quotient).

- **The ideal scenario is to maximise agglomerations at different scales within networked activity centres across South East Queensland, including Brisbane.**

Three types of agglomeration are required – framed by similar principles but on different scales, maximised as part of an SEQ network:

Type 1: City (Brisbane) Innovation precincts

– includes suburban, peri-urban and inner city urbanisation benefits of employment, population, economic productivity and health and wellbeing.

Type 2: Localisation / Neighbourhood centres

– for example Maroochydore, Redcliffe, Southport, Beenleigh delivering agglomeration benefits through each distinct regional employment centre.

Type 3: Digital Work Hubs – based on co-location clusters and highly curated management. Designed for both local businesses and public and private sector teleworkers. Clear purpose to attract and connect a diverse community with each other and a wider ecosystem of accelerators, incubators, investor networks, local and national government programs and international markets.

- Digital work hubs can be part of a new urban agglomeration strategy to revitalise urban and peri-urban areas; most regional centres are facing an uncertain economic future, being heavily service and tourism-based (increasing the further out they are from the city) with increasing competition from city-based online services delivery.
- Digital work hubs offer an important component to the long-term operation of telework, allowing people to work closer to home in an Active Work Model. This model encourages employees to choose their work locations by dividing their working week between a central office base, a digital work hub, and home. It also provides a hub for local large and smaller businesses to collaborate and drive projects. Building knowledge-intensive industries in suburban and regional areas through digital work hubs would address disruption of digital work from commuting,

improve regional productivity, develop regional knowledge, transfer skills, foster entrepreneurship and incubate innovation possibilities in regional-specific business sectors.

- The digital work hub model will need to be intrinsically linked to wider regional and city building goals including the digital economy, employment and creative industry strategies, services and tourism development, and urban transport network initiatives.
- It is simplistic to assume that digital work hubs or teleworking will provide a quick fix to the issue of congestion and transport infrastructure provision. It is not an AND-OR argument. The digital work hub framework will change commuter patterns. The opportunity for transport infrastructure will be in meeting demand for different modes of transport which emerges across the transport network. That is, not everyone will be going in the same direction to Brisbane, which has a finite congestion load, but criss-crossing locally and centrally across a range of time.
- Across SEQ the challenge remains in achieving the balance between strengthening the *connection* of major inter-regional transport routes for continued economic diversification, **and** improving *accessibility* of local transport networks to connect people with major activity centres, health and knowledge hubs, recreational and cultural precincts. Such levels of proximity are crucial in knowledge intensive service-oriented economies.
- Research demonstrated the productivity boost for the entire region if more jobs, dwellings and services were provided via developing existing urban and regional activity centres than Greenfields sites.
- Curation (creating value by connecting people, information, ideas to deliver strategic results) of the collaborative workspace is crucial to its success. This is of increasing importance in regional areas with lower population density and vital wider city building goals – aiming to achieve their own regional agglomerations through networks and hubs – facilitating tourism and services as well as online trading of primary goods, logistics support systems, information systems training and business support.
- Without the high population density that cities enjoy, regional digital work hubs will not be the high turnover, city-based coworking spaces, but dependent on relationship-based networks, anchor tenants and provision of high speed graphics linkages for creatives, event development, video-based training and eMedicine for example.

Activation plan

1. Develop an SEQ digital work hub Activation Model – based upon the research results of the Digital Work Hub project – within the wider regional agglomeration goals of connected and sustainable workplaces and communities (improve regional LQ to the national average).
2. Engage key public and private sector stakeholders with universities to support the development of digital work hubs as key components of regional activity centres.
3. Create a SEQ Activation team to support and build collective resources for digital work hubs; i.e. SEQ digital work hub booking tool, local area campaigns and investment strategies.
4. Leverage the existing SEQ Digital Work Hub network database and social media mechanisms to establish a digital work hub community, partnerships and further research.
5. Enable public sector agencies to establish anchor tenancies in regional centre digital work hubs and provide employees with the option to telework in them or from home for up to 3 days per week.
6. Recognise value add of city-based private sector applying the Active Work Model for employees based in a network of digital work hubs as an alternative to decentralisation distributed across the SEQ region.
7. Recognise private sector ownership and curation of digital work hubs to develop workplace culture and that reflect local diversity and context; promote involvement of local entrepreneurs, service providers and home workers.
8. Conduct further research to determine the impact on health and wellbeing of digital work hubs and their contribution to broader prosperity gains across SEQ.
9. Prioritise the provision of local public, active and road transport infrastructure alongside increasing the density of dwellings, services within existing urban and regional activity centres to capture long term productivity gains.

Regional focus

The final section of this report provides an individual regional focus (Moreton Bay, Sunshine Coast, Logan, Redland, Gold Coast) and examines commuter flows, skilled and knowledge intensive industry worker data combined with local context information to create initial demand modelling for digital work hubs.

The data of quantified high and medium potential users is further distilled in terms of cost savings, job and capital creation using standard econometric modelling.

The additional health and wellbeing benefits are totalled using individual measurements of hours saved commuting, reduction in accidents, additional time for community and so forth. However the greater value-add of local business attraction to the broader prosperity of the regions was outside the scope of the project.

Summary of benefits outlined in the regional study areas:

Infrastructure savings

Kilometres saved by commuters
 Travelling hours saved by commuters
 Accidents saved by commuters
 Greenhouse gas emissions saved
 Additional time for community activities

Regional economic growth

Direct full time equivalent jobs created
 Indirect full time equivalent jobs created
 Direct economic value added (\$millions)
 Indirect economic value added (\$millions)
 Total economic value added (\$millions)

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From Moreton Bay

Total
73,984

BREAK DOWN:

Australian Gov: 4,229
State Gov: 12,404
Local Gov: 1,023
Private Sector: 56,328

Total
70,631

BRISBANE

BREAK DOWN:

Australian Gov: 4,165
State Gov: 12,116
Local Gov: 975
Private Sector: 53,375

Total
1,565

SUNSHINE COAST

BREAK DOWN:

Australian Gov: 23
State Gov: 180
Local Gov: 21
Private Sector: 1,341

Total
706

LOGAN

BREAK DOWN:

Australian Gov: 15
State Gov: 32
Local Gov: 12
Private Sector: 647

Total
456

GOLD COAST

BREAK DOWN:

Australian Gov: 3
State Gov: 12
Local Gov: 3
Private Sector: 438

Total
371

IPSWICH

BREAK DOWN:

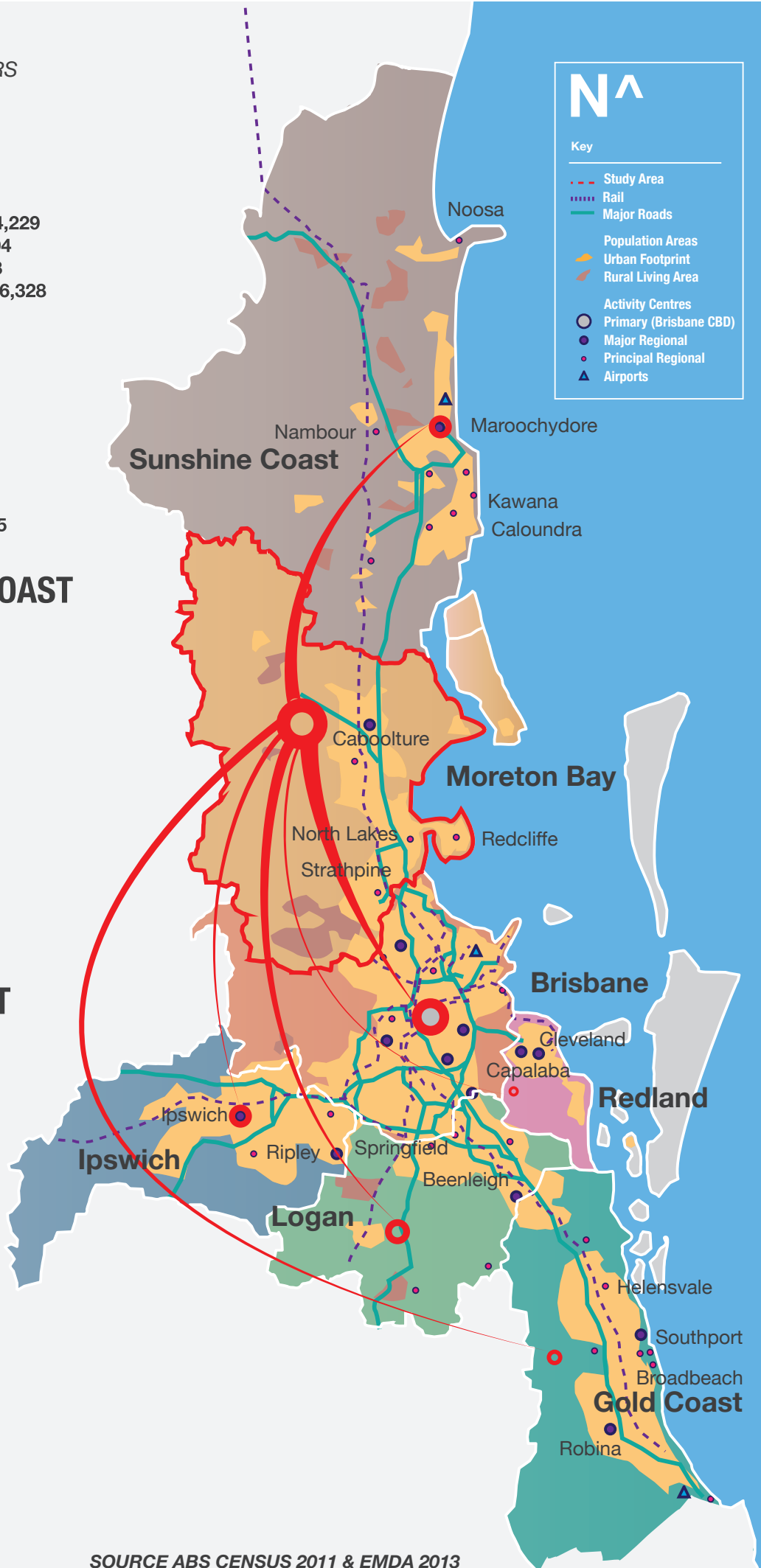
Australian Gov: 23
State Gov: 48
Local Gov: 8
Private Sector: 292

Total
255

REDLAND

BREAK DOWN:

Australian Gov: 0
State Gov: 16
Local Gov: 4
Private Sector: 235



Moreton Bay

The Moreton Bay region will be a thriving region of opportunity where people and businesses in the diverse communities confidently use digital technologies to connect within and beyond the region to support prosperous, sustainable and vibrant lifestyles Digital Futures Plan, 2013

The digital economy

- Transforming work patterns through the use of digital technology to provide employees with the opportunity to work from home, the office or a telework space
- Building an economy which is attractive to new digital, technology and knowledge based employment and investment
- Enabling the region's business community to further innovate and to use digital technologies to grow and create new business and employment opportunities
- Enhancing the provision and accessibility of tertiary education within the region
- Building stronger and more connected communities
- Building on the opportunities provided by an earlier NBN roll out across the region.

Productivity gains

Moreton Bay region has a population of 378,046 people (ABS 2011 Census), a working population of 89,450 (25%) and a Gross Regional Product (2010-11) estimated at \$11.5 billion (similar to the Sunshine Coast region), contributing over 4% to the Queensland economy.

The Moreton Bay region is expected to see annual average employment growth of 2.4% per annum over the next two decades, with employment levels in the region reaching about 282,800 people in 2031-32. The largest industries of health and retail are expected to increase their dominance in the region; however, the greatest growth will be in professional, scientific and technical services. **Overall the areas of the strongest demand are expected to be in areas where there are high skill requirements.**

Moreton Bay faces a rising labour supply challenge of knowledge workers with competition from Brisbane and other regions in SEQ.

Moreton Bay has a number of transformational projects noted to broaden the region's economic base: Moreton Bay Rail Link, Caboolture West, The Corso Project at North Lakes, North East Business Park, the Strathpine Gateway Masterplan, alongside the continued expansion of existing business parks at Brendale and North Lakes, for example. The inclusion of digital work hubs into these precincts has the potential to increase the economic agglomeration benefits of these projects and return on investment to the region.

Knowledge workers location quotient

The Moreton Bay Regional Council Economic Development Strategy is seeking to increase the employment self-containment rate to 70% by 2031. The Location Quotient (LQ), is a measure which compares working and living in the same region to the national average. Currently agglomerations of skilled workers who live and work in Moreton Bay are 20% below the national average: (work) 0.81 and (live) 0.77. The LQ for knowledge intensive workers living and working in Moreton Bay is even lower at (work) 0.65 and (live) 0.79. Moreton Bay has a 15% greater agglomeration of knowledge workers living there than working there, compared to the national average (see p 21).

Moreton Bay – Working population 89,450 (ABS Census, 2011)

	Skilled workers	Knowledge intensive industry
Live there	46,549	19,976
Jobs exist there	25,200	8,558
Live and work there	18,652	7,157
Go out for work	27,897	12,819
Come in for work	1,401	6,548
Net outflow from region	-21,349	-11,418

Both measures point to the opportunity and potential of increasing these numbers, economic activity and work-life balance into the future (see p 20 and p 22).

Commuter flows

Moreton Bay has SEQ's highest commuter numbers with a total of 70,631 travelling into the Brisbane LGA; of this number approx. 30,000 commute into the inner city of Brisbane, with the remainder (3000) moving within the SEQ study area.

EMDA modelling established that 8160 fit within high and medium potential category from the Brisbane LGA population, 3487 of these work in the inner city area (table below).

The adjacent map highlights the large percentage of State Government employees and private sector commuters.

In addition, Moreton Bay has 1410 interstate commuter workers, of which 36.8% are professional/management.

Digital work hub opportunity

EMDA modelling has estimated the initial demand (from ABS statistics and interview data) for a digital work hub, based on members being charged \$50 per day. Conservatively, this model estimates that 1670 (high/medium potential commuters and locals) would potentially use digital work hubs. This has a long term potential of 10-12 digital work hubs across the region based in designated activity centres and commuter corridors. However, the number that indicated they would consider using the facility is larger at 2215 (commuters) and 1166 (locals) from the high and medium potential demand stream.

With a lower daily member charge (eg \$30), it is expected that occupants will be greater in number. Uptake by local high/medium potential knowledge workers is more likely to be 10% than 2% and uptake of at least 30% by commuters.

Moreton Bay digital work hub users

Moreton Bay digital work hubs (EMDA survey results)	Commuter users (high and medium potential selection criteria)	Local users (high and medium potential selection criteria)	TOTAL workers
Potential (high and medium)	8,160	3,384	11,544
Consider using digital work hub (survey)	5,222 (64%)	1,166 (17.9%)	6,388
Digital work hubs estimate (120/hub @\$50/day) = approx. 12 hubs	1,462	208	1,670

Moreton Bay digital work hub productivity gains

Moreton Bay (120 person model)	One digital work hubs at 3.5 days per week	Four (4) digital work hubs (model)	Eight (8) digital work hubs (model)
Total number of work days at the centre per week	420 (120 x 3.5 days)	1,680 days	3,360 days
Ratio commuter : local users	89 C : 11 L	89 C : 11 L	89 C : 11 L
Number of days per month in centre by commuters and locals (total)	1,495 C + 185 L	5,980 C + 740 L	11,960 C + 1,480 L
Total km saved per year by commuters	1,363,400	5,453,600	10,907,200
Total commuter hours saved per year	41,859	167,436	334,872
Additional free time on community activities per year for commuters	6,081	24,324	48,648
Car accidents saved per year	0.6	2.4	4.8
Greenhouse gas savings (kg)	348,076	1,392,304	2,784,608
Direct full time equivalent jobs created to service digital work hub workers	84	336	672
Indirect full time equivalent jobs created to service digital work hub workers	67	268	536
Direct value add	\$10.7M	\$42.8M	\$85.6M
Indirect value add	\$8.5M	\$34M	\$68M
Total value add	\$19.2M	\$76.8M	\$153.6M

This is based on the literature, case study results, co-location benefits, experience with coworking spaces elsewhere and trends to increasing use. The tables on p 34 show the benefits to the Moreton Bay region.

Regional development opportunities

As the population continues to grow, the trend to commute outside the region will increase, potentially ahead of population growth, placing significant strain on infrastructure, increasing commuter times and costs.

The opportunity to transform work patterns to improve the level of employment self-containment will provide a significant range of benefits to the region, by reducing congestion and improving productivity, alongside the associated work-life balance benefits. A higher percentage of residents living and working in the region will enhance communities, increase dollar spend with local businesses and provide more time for residents to volunteer (for example) in their communities.

Therefore, the most significant economic development challenge facing the Moreton Bay region is the creation of a broader diversity of employment opportunities to meet the needs and aspirations of its residents, including the 75,000+ workers who leave the region each day for employment.

Given the large contribution the Moreton Bay skilled and knowledge worker population contributes to Brisbane's GRP from knowledge work, there is significant scope as part of an Active Work Model to cluster a percentage of this into activity centres and the economic flow benefits back into the wider Moreton Bay region.

Importantly, digital work hubs are not promoting decentralisation per se but widening the information flow and economic activity patterns across the knowledge worker commuter population. Digital work hubs also build local high value sector businesses and create a more diverse employment base with ongoing agglomeration benefits.

With the very high level of commuter numbers, naturally this will reflect the type of digital work hubs and the types of co-location activities and organisations, including percentage of commuter/local business mix and design and ICT. In addition, the results indicate the potential for a digital work hubs that is focused on the public and private sector worker. It has been made an important Telework Trial region by a recently announced Queensland Government initiative.

However, the large numbers of commuters should not dominate the trajectory of digital work hubs in Moreton Bay. The work from home numbers (total 6325) and knowledge/skilled workers who live and work in the region is significant and establishing collaborative work environments with entrepreneurs and start-ups in mind is an important component of the strategy to support these economic clusters. Moreton Bay's proximity to Brisbane makes it a highly competitive and cost effective location for business.

The majority of these jobs will be created by small business which also needs the confidence to invest and create these opportunities. Investment attraction, new and emerging industries and digital technologies through the use of more flexible work patterns, for example, can also provide a broader range of employment options, and reduce the need to commute on a daily basis

RDAMB Road Map 2013–16

A step ahead

The region is home to a diverse range of settlements ranging from rural, urban and bayside communities, each with its own characteristics and sense of identity.

The Major Regional Activity Centres (MRAC) for the region are located at Caboolture–Morayfield (Principal Regional Activity Centre), Redcliffe–Kippa-Ring, North Lakes and Strathpine. They are the region's major centres for business, employment, research, education, services, higher density living and social interaction and are centred on public transport nodes.

The region is ideally placed for both private and public sector investment in telework centres based on its population growth and high percentage of residents who are employed in government, office and professional services in the Brisbane CBD.

Moreton Bay Regional Council has recognised this opportunity and is planning to open its first coworking space in Redcliffe during January 2014. Similar opportunities exist across the region for investment in new buildings or the use of existing infrastructure to provide a range of accommodation options for the region's commuters.

The enhanced use of digital technologies provides a significant opportunity for the region's existing businesses to grow, diversify, innovate, create wealth and regional employment. Digital technologies, the enhanced roll out of the NBN and the region's population growth will increasingly attract new investment, driving economic growth and prosperity.

REGIONAL WORK COMMUTERS From The Sunshine Coast

**Total
8,647**

BREAK DOWN:
Australian Gov: 362
State Gov: 1,461
Local Gov: 108
Private Sector: 6,716

**Total
5,188**

BRISBANE BREAK DOWN:

Australian Gov: 316
State Gov: 755
Local Gov: 43
Private Sector: 4,074

**Total
2,910**

MORETON BAY BREAK DOWN:

Australian Gov: 32
State Gov: 666
Local Gov: 59
Private Sector: 2,153

**Total
201**

LOGAN BREAK DOWN:

Australian Gov: 3
State Gov: 12
Local Gov: 3
Private Sector: 183

**Total
175**

GOLD COAST BREAK DOWN:

Australian Gov: 0
State Gov: 13
Local Gov: 3
Private Sector: 159

**Total
104**

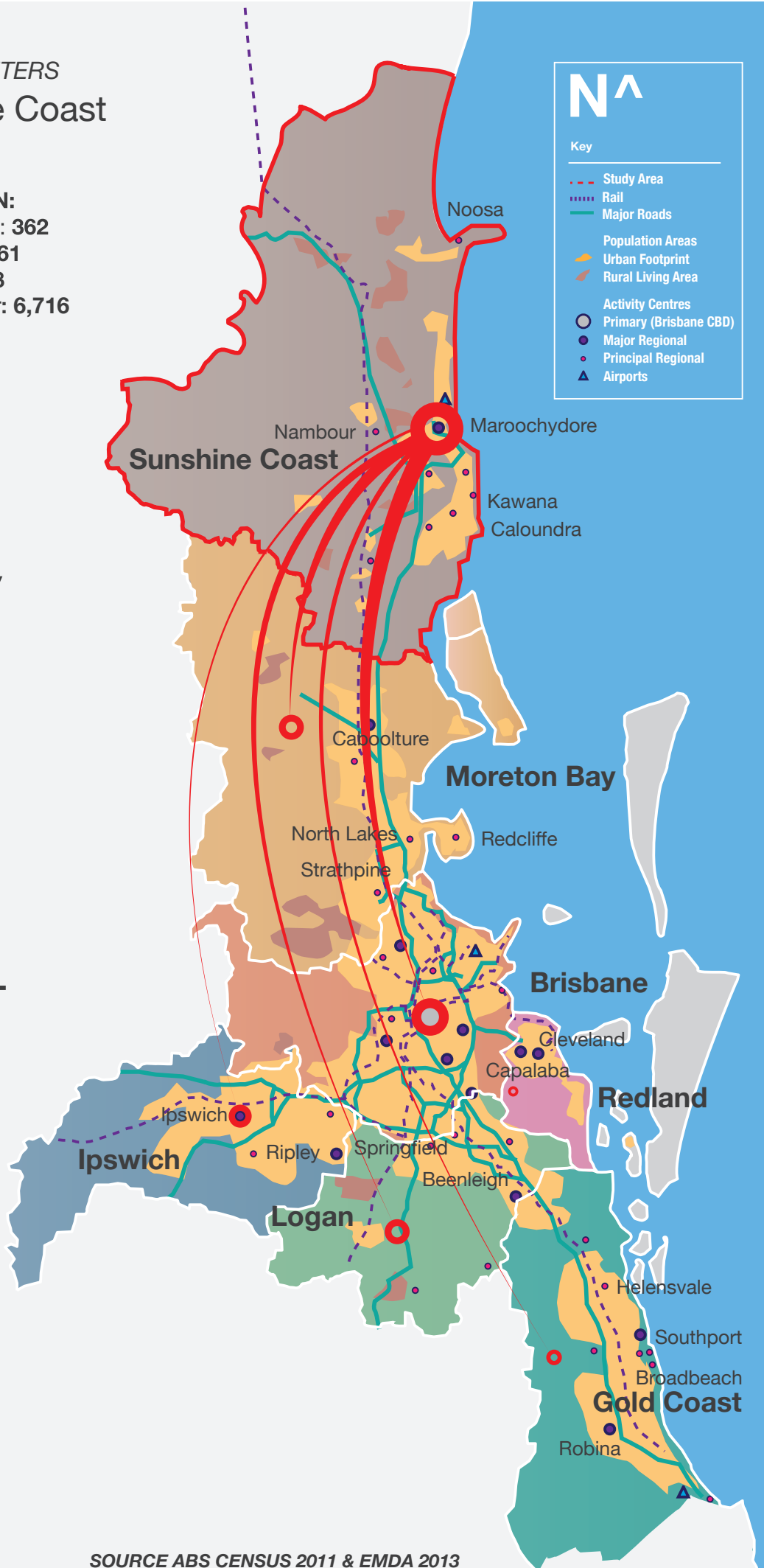
IPSWICH BREAK DOWN:

Australian Gov: 11
State Gov: 10
Local Gov: 0
Private Sector: 83

**Total
69**

REDLAND BREAK DOWN:

Australian Gov: 0
State Gov: 5
Local Gov: 0
Private Sector: 64



SOURCE ABS CENSUS 2011 & EMDA 2013

Sunshine Coast

The digital economy

- Smart21 Communities 2014 member of Intelligent Communities Forum, October 2013 – broadband delivers economic opportunities leading to new jobs, investment and social development
- Google eTown award (Queensland), August 2013 – high digital literacy across the region
- Extensive training and education programs – increasing digital skills of small to medium enterprises
- High speed build 2014–2016 interconnected through Nambour – to businesses, industry, health, education and residential precincts
- Digital infrastructure investment including high-speed broadband – required to match the pace rapidly growing demand for highly skilled workers.

Productivity gains

In 2010-11 the Gross Regional Product for the Sunshine Coast was \$12.5 billion, with 31,758 businesses and a working population of 105,752 (about a third of the total population 306,907). The 2013 Deloitte Workforce Planning Research report identified that the strongest demand for labour on the Sunshine Coast in 2031 will be for **high skill requirements**; labour demand in health and welfare, education and training, professional, scientific and technical services, arts and recreation is projected to grow by 228% from 46,312 jobs in 2011-12 to 105,408 jobs in 2031-32.

With strong competition across SEQ and other Australian cities, supplying this set of skills with compact connected urban infrastructures (dwelling, employment, transport and networks) to support Sunshine Coast businesses requiring those skills will be essential. The creation of digital work hubs to retain skilled workers in their region of dwelling has been highly effective in Amsterdam and is seen as a vital tool for building regional capacity in SEQ.

The Sunshine Coast has a number of transformational projects to broaden the economic base of the region, including the Maroochydore Principal Activity Centre development, Sunshine Coast University Hospital, Sunshine Coast Airport expansion, Kawana Precinct and Sunshine Coast University.

Enabled by ICT infrastructure capacity and flexible workforce conditions, knowledge workers and highly skilled export businesses now contribute strongly to the economic mix of a regional community traditionally dependent on tourism, construction, retail and primary production.

Knowledge worker location quotient

The LQ figure, which compares where skilled workers Live and Work to the national average, is (work) 0.92 and (live) 0.83. The agglomeration of skilled workers who live and work in Sunshine Coast are roughly 15% below the national average (1.0). For knowledge industry intensive workers, LQs of (work) 0.91 and (live) 0.80 apply on the Sunshine Coast. The region has a below average level of agglomeration of knowledge intensive industry workers who live and work there, respectively. It has a 10% greater agglomeration of knowledge workers living there than working there compared to the national average (see p 21).

Collectively, this is about 20% behind the national average and 50% behind Brisbane. However, compared to other regions in the SEQ study area this analysis demonstrates a relatively high concentration of both skilled and knowledge intensive workers working in the region as a proportion of the working population.

Sunshine Coast – Working population 105,752
(ABS Census, 2011)

Live and work	Skilled workers	Knowledge workers
Live there	40,887	16,465
Jobs exist there	33,630	14,021
Live and work there	32,129	13,575
Go out for work	8,759	2,890
Come in for work	1,501	446
Net outflow from region	-7,257	-2,444

Both LQ measures highlight the potential of increasing the percentage of knowledge intensive industry workers within the region, attracted by work-life balance, environmental sustainability and cooperative community values to build economic prosperity across the Sunshine Coast.

Commuter flows

Since the 2006 Census there has been a 38% increase in daily commuters to other regions (mainly Brisbane) for their main job. This has been largely attributed to the 2008 GFC, and the downturn experienced in the region. These findings indicate the lengths that knowledge workers will go to maintain their employment in a chosen field (Bernard Salt, *The Australian*, July 2013).

The Sunshine Coast lost 10,672 commuters a day, of which 8647 workers commuted within the study area, 5188 traveling into Brisbane LGA with approximately half of that number into the inner city of Brisbane (ABS Census, 2011). Interstate workers on the Sunshine Coast made up 2025 workers of whom 36.8% were professional/managers. Significantly 8891 workers did not commute, **working within their region at home** – in own business,

as consultants and/or telework. This includes a range of occupations from the technology, entertainment and design spectrum/internet-based businesses that work locally, nationally and internationally – part of the growing demographic of professionals, entrepreneurs and cultural creatives attracted to the Sunshine Coast's lifestyle, natural assets, environmental sustainability and cooperative community values.

Digital work hub opportunity

EMDA modelling has estimated the initial demand (based on ABS statistics and interview data) for collaborative workspace/digital work hubs (digital work hubs), based on members being charged \$50 per day. The total number of both commuters and locals who would consider using a digital work hubs is 2887 out of a high and medium potential population of 6168.

Conservatively, the model estimates that 379 early adopters (commuter and locals) would initially use a digital work hub. Given the nature of the Sunshine Coast region, with a lower

daily member charge (eg \$30), it is expected that occupants of regional digital work hubs will be more permanent than in urban hubs.

The Sunshine Coast is really booming, but the public transport system in Brisbane is so crap (sic), there are no alternatives, you have to drive. Because public transport is so bad you have to drive and the parking is just horrendous EMDA Survey Interview, 2013

However, uptake by local high-medium potential skilled/knowledge workers is more likely to be 10% than 2%, and uptake of at least 30% by commuters with high-medium potential skilled/knowledge work. EMDA survey results, co-location benefits, experiences with digital work hubs elsewhere and trends to increasing use show benefits to the region.

Sunshine Coast digital work hub users

Sunshine Coast digital work hubs (EMDA survey results)	Commuter users (high and medium potential selection criteria)	Local users (high and medium potential selection criteria)	TOTAL workers
Potential (high and medium)	837	6,817	7,654
Consider using digital work hub (survey)	539 (64%)	2,348 (34.4%)	2,887
Digital work hubs early adopter estimate (120/hub @\$50/day) = 4 hubs	210	169	379

Sunshine Coast digital work hub productivity gains

Total number of work days at the centre per week	420 (120 x 3.5 days)	1680 days	3360 days
Ratio commuter: local users	50 C : 50 L	50 C : 50 L	50 C : 50 L
Number of days per month in centre by commuters and locals	832 C + 832 L	3,328 C + 3,328 L	6,656 C + 6,656 L
Total km saved per year by commuters	1,876,277	7,984,158	15,010,216
Total commuter hours saved per year	23,287	93,149	186,296
Additional free time on community activities per year for commuters	3,383	13,532	27,064
Car accidents saved per year	0.8	3.6	6.4
Greenhouse gas savings (kg)	479,014	2,038,356	3,832,112
Direct full time equivalent jobs created to service digital work hub workers	84	336	672
Indirect full time equivalent jobs created to service digital work hub workers	67	268	536
Direct value add	\$10.7M	\$42.8M	\$85.6M
Indirect value add	\$8.5M	\$34M	\$68M
Total value add	\$19.2M	\$76.8M	\$153.6M

Regional development opportunities

The Sunshine Coast region (Sunshine Coast and Noosa Councils), currently home to more than 320,000 people, covers over 3000 sq km from Noosa's northern beaches to Caloundra and the Glasshouse Mountains in the south, and west to Kenilworth. The population is expected to reach 520,000 by 2031.

In the new millennium, the Sunshine Coast has received strong migration by sea changers, tree changers and cultural creatives seeking work-life balance, lifestyle, environmental sustainability and cooperative community values.

Unique and well-defined communities are diverse and resilient with a strong sense of community wellbeing. Communities are focussed around vibrant and attractive centres, which support business and community needs SCC, 2012, p 44

The urban form has naturally built up along the coastal strip connecting to key employment, services and community infrastructure. It provides an excellent base to apply established best practice policy for diverse, compact and connected (agglomerated) communities to achieve the critical economic mass that this research clearly demonstrates.

Net capital and benefits retained by regional communities through networked digital hubs allows them to agglomerate critical economic mass, generating jobs, regional productivity, housing, public transport and services.

The strategic focus in the short to medium term should remain on building upon the successful concentration of knowledge workers on the Sunshine Coast, up to that of the national average. Attracting knowledge workers to fill the specific roles required by local businesses is an evidenced challenge, when competing with the Brisbane, Sydney and Melbourne markets. Increasingly the total package – interesting fulfilling work, lifestyle and community, affordable connected housing and reduced travel time - is attracting knowledge workers to the region both globally and nationally, and opening up additional markets.

Community and personal wellbeing

With productivity gains for employers, quality time gains for families, transfer of knowledge, skills and connections to local businesses and engagement with local community development activities.

Significantly this increases the level of accessibility for women in the workforce and reduced time spent in childcare or after school care facilities by young children.

Community activities would have 5277 more hours available to supplement 62,000 (20.2% of population) active volunteers already engaged in land care, elder care, youth care, cooperatives, cultural events, festivals and other community services.

Further, exposure to a wide range of entrepreneurs and small businesses via a collaborative workspace provides mentoring and knowledge workers employment opportunities for the region's youth before during and after study.

However, the additional health and wellbeing from reduced commuter stress, time to exercise and time available to spend volunteering in community is another asset to the region, with quantifiable benefits outside the scope of this work.

Stepping forward

The data indicates Sunshine Coast Digital work hubs would initially have a coworker focus based on the creative and ICT industries, potentially co-located with other government and community anchor tenants. This will provide high level Digital work hubs that will enable larger private and public sector organisations the attractive environment (OHS) to support their employees to work remotely as part of the Active Work Model. Anecdotal evidence has suggested that for some employees this would provide the impetus to move out of the city and permanently base themselves on the Sunshine Coast.

The region has several privately managed shared office locations and newly developing coworking spaces in Noosa, Maroochydore and Caloundra with strong interest from the market and non profit community sector to meet the demand of a variety of distinct collaborative work spaces in the near future.

Digital work hubs are recommended for consideration in the principle, major and district activity centres and connected to the region's transformational projects to optimise infrastructure, dwelling density, employment and transport networks:

- Maroochydore Principal Activity Centre Kawana Precinct
- Noosa, Caloundra, Nambour, Beerwah, Sippy Downs
- Sunshine Coast University Hospital, Sunshine Coast Airport expansion, and Kawana Precinct.

District activity centres provide opportunity for smaller business models to develop alongside community infrastructure and local context. These centres include Maleny, Coolumb, Cooroy, Buderim, Palmview, Mooloolaba and Currumbundi.

'For my chap who has his parents on the Sunshine Coast and wants to work up there one day a week to see them I can just see him appreciating a hub like this to cut down his travel time but still have the working environment he needs'

EMDA Survey Interview, 2013

From Logan

Total
58,098

BREAK DOWN:

Australian Gov: **1,813**
State Gov: **6,218**
Local Gov: **675**
Private Sector: **49,392**

Total
46,977

BRISBANE

BREAK DOWN:

Australian Gov: **1,659**
State Gov: **5,458**
Local Gov: **536**
Private Sector: **39,324**

Total
6,297

GOLD COAST

BREAK DOWN:

Australian Gov: **90**
State Gov: **374**
Local Gov: **66**
Private Sector: **5,767**

Total
2,531

IPSWICH

BREAK DOWN:

Australian Gov: **51**
State Gov: **206**
Local Gov: **34**
Private Sector: **2,240**

Total
1,848

REDLAND

BREAK DOWN:

Australian Gov: **13**
State Gov: **171**
Local Gov: **39**
Private Sector: **1,625**

Total
387

MORETON BAY

BREAK DOWN:

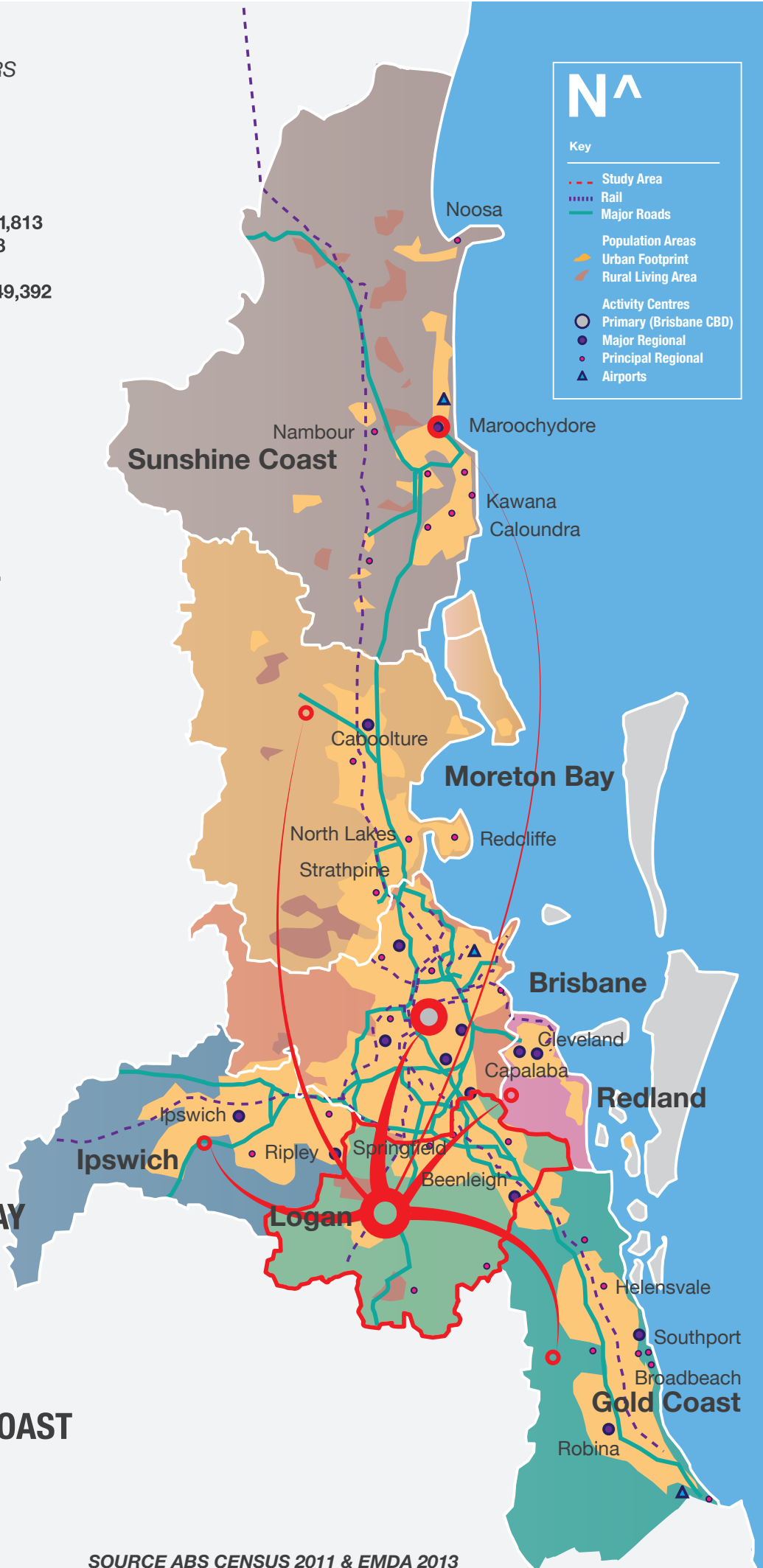
Australian Gov: **0**
State Gov: **6**
Local Gov: **0**
Private Sector: **381**

Total
58

SUNSHINE COAST

BREAK DOWN:

Australian Gov: **0**
State Gov: **3**
Local Gov: **0**
Private Sector: **55**



SOURCE ABS CENSUS 2011 & EMDA 2013

The digital economy

Logan City Council has embraced the digital revolution and developed a Digital Economy Action Plan based on the following principles:

1. Digital economy awareness

Aim: To increase the awareness of the opportunities and risks in the digital economy for industry and the community

2. Digital business capability

Aim: To facilitate the creation of digital infrastructure and services to enhance growth of the city for both business and the community

3. Council leadership

Aim: Council is seen as the leader for the city in the digital economy

4. Creation of 'digital nodes'

Aim: Create 'digital nodes' that provide digital infrastructure and services within the region for the region and surrounding cities

5. Support access to digital economy services

Aim: To ensure that all members of the community have access to digital economy services within the city

Productivity gains

Logan City has a population of 278,050, a working population of 73,592 and a Gross Regional Product (2010-2011) estimated at \$9.7 billion; given the size of the working population (26.5%) it is quite substantial (Moreton Bay and Sunshine Coast are about \$11.5B and \$12.5B, respectively). The difference lies within the proportion of the working population and the type of employment sectors. Logan is expected to see a population growth to 434,000 in 2031.

The economy is based on retail, service industry, education, health and community services. Knowledge sector workers are under-represented, with an undersupply of jobs for its residents working in office services, government, community services, manufacturing, transport and construction. It is anticipated that employment growth will need to occur in advanced manufacturing, transport, logistics, health care and education. Logan, along with the other regions surrounding Brisbane, faces a supply challenge of knowledge workers. The objective is to create at least 53,000 jobs to support this growth.

Logan Council Economic Development Priorities are:

- A digital economy strategy – designed to position Logan City at the forefront of digital economy growth in the next decade. Logan City is one of the first Australian cities to prepare a digital economy strategy (DES) at the same time as an economic development strategy (EDS). This strategy focuses on building digital economy skills in the business and wider community, creating infrastructure nodes to support digital economy investment and growth, and having Logan City Council lead as an adopter of digital economy tools and services.
- Building industry competitiveness in Logan City across all key and emerging sectors of the economy. The key sectors include manufacturing, retail/wholesale, construction and property services, education and training, health services, and emerging sectors including ICT, rural industries, tourism and service industries.
- Creating an environment for investment that encourages new investment by Logan firms and encourages new investment in the city.
- Workforce and skills development to improve the city's competitiveness and economic growth.

Knowledge workers location quotient

While highly skilled workers find employment in Logan with LQ (work) 0.82, a relatively low number both live and work in Logan (live) 0.62 compared with the national average (1.0). Similarly, with an LQ of (work) 0.64 and (live) 0.63 Logan has a 40% below national average level of agglomeration of knowledge intensive industry workers who Live and Work there. Both measures point to an opportunity to target affordable highly skilled worker housing, knowledge sector workers and employment precincts to build high value local sectors and local economic activity (see p 21).

Logan – Working population 73,592 (ABS Census, 2011)

Live and work	Skilled workers	Knowledge workers
Live there	27,604	12,031
Jobs exist there	20,854	6,731
Live and work there	9,875	3,986
Go out for work	17,729	8,045
Come in for work	10,975	2,745
Net outflow from region	-6,750	-5,300

Commuters

Logan has an underdeveloped public transport system, which creates reliance on commuter traffic on major arterial networks, with a focus on people commuting between home and the city. Capacity in cross region links connected with public transport network planning has been identified as necessary to improve access to employment, health and social services (RDALR *Road Map* 2013–16).

From a working population of 73,592, Logan lost a total 58,098 commuters each day, with a large majority (46,977) commuting into Brisbane LGA, of which 13,993 work in the inner city (ABS Census, 2011). An additional 946 residents work interstate, of which 24.7% are professional/managers (EMDA, 2013).

The breakdown between government (8706) and private industry (49,392) commuters is indicated in the Map p 40. Of these commuters, 4459 have been categorised as high/medium potential to use a digital work hub. The figures of the other digital work hub demand stream, Live and Work in the LGA, totalled 1709 in the high and medium potential

worker category. This estimate includes the 3737 people working from home.

The digital hub opportunity

EMDA modelling has estimated that the initial demand (based on ABS statistics and interview data) for a Digital Work Hub, based on members being charged \$50. Conservatively, this model estimates that 589 early adopters (commuters and locals) would initially use a digital work hub. However, 3441 was the number estimated to be high and medium potential commuters and live and work residents who would consider using digital work hubs (table below).

With a lower daily member charge for Logan (eg \$30) it is expected that this number will be greater and reflect a more permanent member base. This is based on the literature, case study results, co-location benefits, experience with coworking spaces elsewhere and trends to increasing use.

The following tables show the benefits to the Logan LGA for each 120 member digital work hub.

Logan digital work hub users

Logan digital work hubs (EMDA survey results)	Commuter users (high and medium potential selection criteria)	Local users (high and medium potential selection criteria)	TOTAL workers
Potential (high and medium)	4,459	1,709	6,168
Consider using digital work hub (survey)	2,853 (64%)	588 (34.4%)	3,441
Digital work hub estimate (120/hub @\$50/day) = 7 hubs	798	59	857

Logan digital hub productivity gains

Logan (120 person model)	One DWH at 3.5 days per week	Four (4) digital work hubs (model)	Eight (8) digital work hubs (model)
Total number of work days at the centre per week	420 (120 x 3.5 days)	1,680 days	3,360 days
Ratio commuter : local users	86.4 C : 13.6 L	86.4 : 13.6 L	86.4 C : 13.6 L
Number of days per month in centre by commuters and locals	1,452 C + 229 L	5,808 C + 916 L	11,616 C + 1,832 L
Total km saved per year by commuters	870,947	3,483,788	6,967,576
Total commuter hours saved per year	40,644	162,576	325,152
Additional free time on community activities per year for commuters	5,904	23,616	47,232
Car accidents saved per year	0.4	1.6	3.2
Greenhouse gas savings (kg)	222,353	889,412	1,778,824
Direct full time equivalent jobs created to service digital work hub workers	84	336	672
Indirect full time equivalent jobs created to service digital work hub workers	67	268	536
Direct value add	\$10.7M	\$42.8M	\$85.6M
Indirect value add	\$8.5M	\$34M	\$68M
Total value add	\$19.2M	\$76.8M	\$153.6M

Regional development opportunities

Logan is one of the most diverse cities in Queensland with 26% of the population born overseas and migration representing a significant proportion of the region's growth. This is a distinction that places Logan with significant opportunities within the digital disruption across key sectors of work as discussed within the report, but also as a gateway to global high value sector industries.

Logan City is ideally placed in the developing region of SEQ, located between the Gold Coast and Brisbane CBD, and an integral part of Brisbane's growth region, the Western Corridor. There are major residential developments planned at Park Ridge, Yarrabilba and Greater Flagstone and commercial / industrial developments planned for Springwood, Meadowbrook, Beenleigh and Crestmead (Southwest 1 & 2).

Including connectivity, digital infrastructure and services in these developing regions is critical to growth of the digital economy in Logan and SEQ, but presents some immediate challenges due to the current availability of broadband and services within the region. Addressing these challenges requires active collaboration between council, developers, industry and the community. The future high speed broadband rollout will enhance city safety by supporting and allowing the expansion of council's safety camera network.

The challenge is to encourage investment via urban renewal, diversify the employment base and maximise the attractiveness for business with a higher percentage of affordable housing within these digital work hub innovation clusters.

Beenleigh is an exceptional location for a regional digital work hub with its proximity to major rail and road infrastructure services and would alleviate considerable traffic congestion between Brisbane and the Gold Coast. The other activity centres for consideration include:

Principle and district activity centres for digital work hubs

- Beenleigh
- Springwood, Logan central, Jimboomba
- Meadowbrook educational and hospital precinct
- Park Ridge, Browns Plains (Southwest One Development).

Community and personal wellbeing

Intergenerational unemployment is an ongoing challenge for the community and government in Logan. Digital work hubs can provide co-located digital literacy programs, mentoring and education-focused anchor tenants as part of the business model.

With productivity gains for both employers, quality time gains for individuals and families, especially with regards to childcare hours and after school activities, transfer of knowledge, skills and connections to local businesses. However, the additional health and wellbeing from reduced commuter stress, time to exercise and time available to spend volunteering in community is another asset to the region, with quantifiable benefits outside the scope of this work.

Stepping forward

Council, through the Logan Office of Economic Development, is taking a lead role in developing opportunities created by the emerging digital economy. Current initiatives include the development of a digital economy awareness program for SMEs, understanding and documenting existing digital infrastructure within the city, facilitating forums with industry groups to increase the awareness of digital economy opportunities, and active collaboration with NBN Co, Regional Development Australia Logan and Redlands, and relevant industry associations. This leadership role must continue to grow to implement the priorities defined in this strategy and ensure that Logan city prospers in the emerging digital economy.

Logan is well placed to realise opportunities that the roll out of the NBN and increased access to the digital economy will bring:

- Logan is ideally located to support provision of digital economy services to Brisbane, Gold Coast and the western corridor
- Leverage existing fibre connectivity within the developed parts of the city, to encourage early benefits in the digital economy
- Creation of 'digital nodes' within the city that leverage existing infrastructure and encourage investment in new innovative services
- Increase collaborative marketing of the businesses and community groups within the region
- Align the long term city plans and investment in emerging digital infrastructure to expedite the availability of digital economy services within the city
- Increase reach, responsiveness and availability of council services using digital economy services
- Increase safety and security of the city
- Consider incorporating digital economy opportunities and sustainable technologies to improve sustainability and prosperity of the city
- Enhance the identity of Logan as a city that is thriving in the digital economy
- Encourage growth of home based business and SMEs within the city, enabled by digital economy services
- Opportunity to encourage emerging digital industries to the city, through provision of high quality services in 'digital nodes'.

'Logan is the third biggest regional council in Australia, something like that, because public transport in Brisbane is so bad you have to drive and the parking.... well you just can't. It's a nappy valley there too, you've got heaps of young mums starting businesses there, I think one would be really good there' EMDA Survey Interview, 2013

REGIONAL WORK COMMUTERS From Redland

**Total
31,021**

BREAK DOWN:
Australian Gov: 1,161
State Gov: 4,126
Local Gov: 370
Private Sector: 25,364

**Total
26,379**

BRISBANE BREAK DOWN:

Australian Gov: 1,045
State Gov: 3,673
Local Gov: 300
Private Sector: 21,361

**Total
2,987**

LOGAN BREAK DOWN:

Australian Gov: 88
State Gov: 351
Local Gov: 51
Private Sector: 2,497

**Total
976**

GOLD COAST BREAK DOWN:

Australian Gov: 17
State Gov: 48
Local Gov: 13
Private Sector: 898

**Total
401**

IPSWICH BREAK DOWN:

Australian Gov: 11
State Gov: 34
Local Gov: 6
Private Sector: 350

**Total
231**

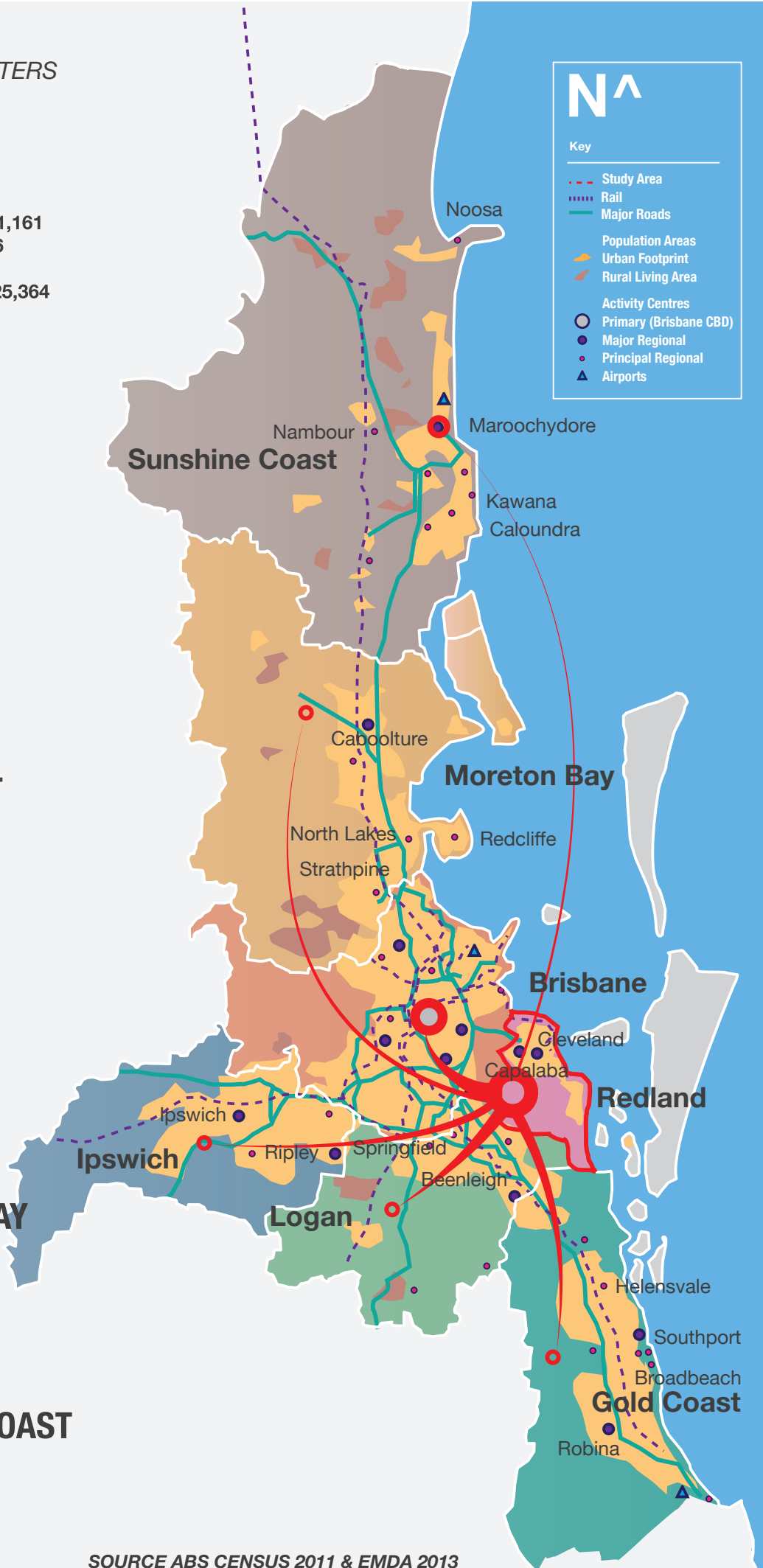
MORETON BAY BREAK DOWN:

Australian Gov: 0
State Gov: 14
Local Gov: 0
Private Sector: 217

**Total
47**

SUNSHINE COAST BREAK DOWN:

Australian Gov: 0
State Gov: 6
Local Gov: 0
Private Sector: 41



SOURCE ABS CENSUS 2011 & EMDA 2013

Redland

The digital economy

In September 2013, The Red Place was established to provide a 'space to make things happen'. Located in the heart of Cleveland, Redland City, The Red Place is a social enterprise which offers opportunities to renew, educate, design and play.

Renew: Engage with like-minded creative professionals, networks and audiences, bringing new energy to ideas and plans. Reignite a passion for the arts, culture, health and wellbeing and innovation placed in a community of shared vision.

Educate: The Red Place promotes an environment for skill sharing, up-skilling and advice for project creation for creative and emerging entrepreneurs to help fill the gap between ideas and delivery in the arts, a place for creative hire and services. For members, participants and audiences, The Red Place is all about increasing knowledge and developing opportunities to learn.

Design: There is also an opportunity for individuals to join a membership with The Red Place to become part of an innovative cooperative creative coworking space, with access to a range of services and support mechanisms for suitable businesses and entrepreneurs, and for start up and emerging creative individuals.

Play: The Red Place will run and host a variety of playful interactive creative activities for all ages.

Productivity gains

In 2010-11 the Gross Regional Product for Redland LGA was \$4.5 billion, based on a total population of 138,665 and working population of 35,461 (25%). The city's overall economy is expected to diversify and provide an additional 17,900 local jobs, strengthening a lifestyle and knowledge-based economy, and new growth sectors such as education, professional business services, cultural and creative industries, marine and bay businesses, and home-based business.

The Redland area is actively seeking to increase self sufficiency of employment, reducing the numbers of residents needing to commute from their local area to work elsewhere (RDALR *Road Map* 2013-16). There are an estimated 11,060 businesses operating in Redland where a distinctive feature is a high proportion of home-based businesses, with an estimated 2771 people (or 4.5% of the Redland workforce) working from home.

The roll out of the NBN and increased access to the digital economy will contribute greatly to reducing the digital divide, in particular the Redland island communities who currently lack adequate mobile service coverage will benefit greatly through increased social and economic participation.

Knowledge workers location quotient

Redland is placed high in comparison to the other LGAs surrounding Brisbane in the national average level of agglomeration (LQ) for highly skilled workers who (live) 0.87 and (work) 0.83 there, given the total working population is only a quarter of the overall living population. While there are higher concentrations of knowledge industry intensive workers who live there (LQ 0.89) than work (0.74) the LQ values for the cluster are high compared to other regional areas surrounding Brisbane (see p 21).

Redland – Working population 35,461 (ABS Census 2011)

Live and work	Skilled workers	Knowledge workers
Live there	19,389	8,299
Jobs exist there	10,146	3,843
Live and work there	7,040	3,142
Go out for work	12,349	5,157
Come in for work	3,106	701
Net outflow from region	-9,234	-4,456

The LQ concentration figures for workers in knowledge intensive industries who live in Redland is again below the national average. However, this is a regional strength and is a great platform for the establishment of digital work hubs within designated activity centres to capture the capacity of Redland as a place for knowledge-based industries and jobs.

Commuters

Redland has an underdeveloped public transport system, which creates reliance on commuter traffic on major arterial networks, with a focus on people commuting between home and Brisbane. Capacity in cross region links connected with public transport network planning has been identified as necessary to improve access to employment, health and social services (RDALR *Road Map* 2013-16).

Redland lost 31,021 commuters each day, with a very large majority (26,379) commuting into Brisbane LGA, of which 9623 work in the inner city. An additional 583 residents work interstate of which 36.7 are professional/managers (EMDA, 2013). The breakdown between government and private industry workers is included in the map opposite.

The digital work hub opportunity

EMDA modelling has estimated that the initial demand (based on ABS statistics and interview data) for a digital work hub, based on members being charged \$50. Conservatively, this model estimates that 589 early adopters (commuters and locals) would initially use a DWH. From the EMDA survey, the total number of high and medium

potential commuters, and live and work residents who would consider using digital work hubs was 4421 (table below).

With a lower daily member charge (eg \$30) it is expected that this number will be greater and reflect a more permanent member base.

This is based on the literature, case study results, co-location benefits, experience with coworking spaces elsewhere and trends to increasing use.

The following tables show the range of benefits to the Redland LGA for each 120 member digital work hub.

Regional development opportunities

Redland City is located about 26 km southeast of the Brisbane CBD. It is bounded by Moreton Bay and North Stradbroke Island in the north and east, Gold Coast and Logan cities in the south, and Brisbane in the west.

Redland enjoys a relaxed coastal lifestyle, and is a bayside locality nestled between three major population centres. It contains urban and rural areas, unique natural environments, diverse bay and island landscapes, and key regional building elements of:

- Social integration – facilitating strong and resilient communities
- Connectivity – virtual and spatial networking of people both as consumers and workers
- Economic consolidation – regional employment, economic and job growth.

Given the percentage of agglomeration of knowledge workers, commuter numbers, high amount of people currently working from home and considerable lifestyle attractions, Redland has significant opportunities for the development of digital work hubs across the region.

Redland digital work hub users

Redland digital work hubs (EMDA survey results)	Commuter users (high and medium potential selection criteria)	Local users (high and medium potential selection criteria)	TOTAL workers
Potential (high and medium)	3,016	1,405	4,421
Consider using digital work hub (survey)	1,930 (64%)	483 (34.4%)	2,413
Digital work hub estimate (120/hub @\$50/day) = 5 hubs	540	49	589

Redland digital work hub productivity gains

Redlands (120 person model)	One digital work hub at 3.5 days per week	Four (4) digital work hub(model)	Eight (8) DWH (model)
Total number of work days at the centre per week	420 (120 x 3.5 days)	1,680 days	3,360 days
Ratio commuter : local users	84.6 C : 15.4 L	84.6 C : 15.4 L	84.6 C : 15.4 L
Number of days per month in centre by commuters and locals	1,452 C + 264 L	5,808 C + 1,056 L	11,616 C + 2,112 L
Total km saved per year by commuters	1,323,840	5,295,360	10,590,720
Total commuter hours saved per year	40,644	162,576	325,152
Additional free time on community activities per year for commuters	5,904	23,616	47,232
Car accidents saved per year	0.6	2.4	4.8
Greenhouse gas savings (kg)	337,976	1,351,904	2,703,808
Direct Full Time Equivalent jobs created to service digital work hub workers	84	336	672
Indirect full time equivalent jobs created to service digital work hub workers	67	268	536
Direct value add	\$10.7M	\$42.8M	\$85.6M
Indirect value add	\$8.5M	\$34M	\$68M
Total value add	\$19.2M	\$76.8M	\$153.6M

Digital work hubs will provide productivity gains for both employers, quality time gains for individuals and families, especially with regards to childcare hours and after school activities, transfer of knowledge, skills and connections to local businesses.

The proposed rollout of the NBN brings the promise of more responsive disaster management and greater resilience for rural and island communities.

With a higher average age than most other states, Redland's older residents will benefit from the digital economy by having a greater ability to participate and stay connected socially and access information and services from home.

However, the additional health and wellbeing from reduced commuter stress, time to exercise and time available to spend volunteering in community is another asset to the region, with quantifiable benefits outside the scope of this work.

Moving forward

High commuter figures, percentage of people who work from home and attractive lifestyle location creates significant opportunity to develop digital work hubs within the region's activity centres. These include:

Major centre, district centres, local centres

- Capalaba, Cleveland and Victoria Point
- Alexandra Hills and Birkdale
- Stradbroke Island Point Lookout
- Priority Declared Areas: Toondah Harbour and Weinam Creek.

Strategies need to focus on people who live and work in the region and work with council to develop a campaign to achieve the self-containment goals:

- Strong sense of community – idea of cooperatives as business model
- Geographic disadvantage of island communities – multiservice hubs, particularly with evolving role of schools in community and lack of education facilities on islands
- Council strongly committed to employment and economic self-containment as well as opening up export/international trade relations
- Council investigating possibilities for opening up further existing facilities, such as Performing Arts Centre
- RDA/Council/State Government and Chamber of Commerce will continue to hold digital economy events.

REGIONAL WORK COMMUTERS From The Gold Coast

Total
23,686

BREAK DOWN:
Australian Gov: 840
State Gov: 2,689
Local Gov: 227
Private Sector: 19,930

Total
15,447

BRISBANE BREAK DOWN:

Australian Gov: 685
State Gov: 1,658
Local Gov: 92
Private Sector: 13,012

Total
6,581

LOGAN BREAK DOWN:

Australian Gov: 101
State Gov: 912
Local Gov: 116
Private Sector: 5,452

Total
666

IPSWICH BREAK DOWN:

Australian Gov: 41
State Gov: 53
Local Gov: 4
Private Sector: 568

Total
594

REDLAND BREAK DOWN:

Australian Gov: 4
State Gov: 52
Local Gov: 15
Private Sector: 523

Total
264

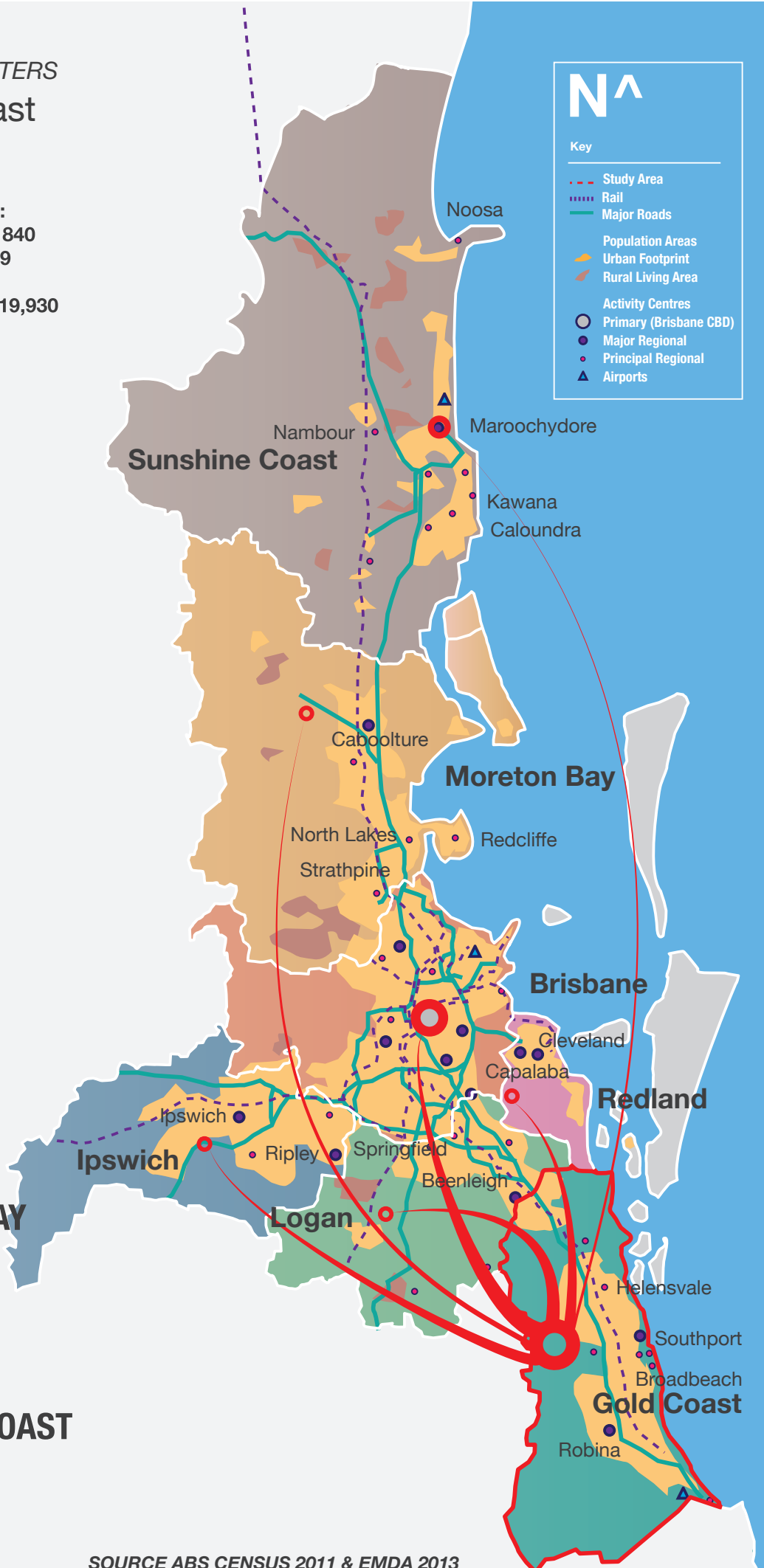
MORETON BAY BREAK DOWN:

Australian Gov: 4
State Gov: 0
Local Gov: 9
Private Sector: 251

Total
134

SUNSHINE COAST BREAK DOWN:

Australian Gov: 5
State Gov: 0
Local Gov: 5
Private Sector: 124



SOURCE ABS CENSUS 2011 & EMDA 2013

Gold Coast

A digital city

The Gold Coast will harness the resources and capabilities of its educational institutions, increasingly-educated workforce and enabling technologies such as the high speed broadband to take advantage of emerging technologies so as to be positioned as a modern economy and which businesses and residents embrace digital and communication technologies to produce better economic, educational and health outcomes for the city (RDAGC *Road Map* 2013–16).

Key activities 2013

2013 IBM Smarter Cities Challenge winner

Digital Enterprise Program funding until the end of 2014

Startup Weekend July & November 2013

GovHack 2013 & 2014

Sir Tim Berners-Lee public event 2013

Signature infrastructure project – Active Digital City: engage the community to use digital and communications technology for better economic outcomes

Signature innovation projects including Open Data Access Project and the Innovation and Commercialisation Network

Participation in Broadband Today Alliance

Winner of the Digital Productivity Award at the 2013 Economic Development Australia Awards

Development and implementation of the Gold Coast's first Accelerator Program

Productivity gains

The Gold Coast is Australia's sixth largest city by population. This region is currently enjoying a third phase of development with the population doubling over the last 20 years, a large economy and broad economic profile. The Gross Regional Product (2010–11) for the Gold Coast is \$24 billion, a quarter of the Brisbane Metro GRP and the second largest in the SEQ region. The total working population of 184,583 is just under a third of the total living population of 494,501.

The strong economic drivers of the past, including tourism and construction, are unlikely to provide the same level of economic stimulus for the Gold Coast's economy into the future. The region is now capitalising on a strong platform of education infrastructure, emerging creative industries, health sector and significantly a robust fly-in-fly-out (FIFO) population.

The future drivers of the economy with the rise of digital technology are expected to be around knowledge intensive industries, and industries requiring new skills, business

investment and infrastructure to ensure success (RDAGC, *Road Map* 2013–16). This provides the base for creating knowledge worker clusters within digital work hub precincts across the region.

Knowledge workers location quotient

Of all the regions in the SEQ study area outside Brisbane, the Gold Coast can celebrate being closest to the national average for working and living in the same region (LQ). Knowledge intensive industry workers who live there rank at 0.95 and work there at 0.97, respectively. Conversely, agglomerations of skilled workers who live and work in the Gold Coast are below the national average and more similar to other regions in the study area at (work) 8.9 and (live) 0.87, respectively (see p 21).

Gold Coast – Working population 184,583
(ABS Census 2011)

Live and work	Skilled workers	Knowledge workers
Live there	68,874	31,443
Jobs exist there	57,159	26,179
Live & work there	50,163	24,000
Go out for work	18,511	7,443
Come in for work	6,996	2,179
Net outflow from region	-11,715	-5,264

As indicated both LQ measures point to the fact that the Gold Coast has a slightly higher degree of agglomeration of knowledge intensive industry workers working there than living there, compared to the national average level. It has a slightly higher agglomeration of skilled workers working there than living there. This result reflects the trend and potential of the Gold Coast as a place for knowledge-based industries and jobs via the creation of digital work hubs for both retaining and building a diverse platform for knowledge workers in their region of dwelling.

Commuters

There has been a 62% increase in commuter flows from the Gold Coast to Brisbane between 2006–2011, up 9900 on 2006 figures. The KPMG report into the *Gold Coast Long Commuter Workforce* (August 2013) identified the Gold Coast to Brisbane Corridor as the nation's biggest inter-city community flow. This increase is largely attributed to the 2008 GFC effect on tourism, construction and export markets and reflective of how much the residents of the Gold Coast love their lifestyle that they are willing to commute rather than relocate.

The Gold Coast lost 23,686 commuters a day within the study area; an additional 7290 people work interstate, and 11,386 people work from home (ABS Census 2011).

Predominately, these workers are going into Brisbane (15,447) and half of that number into the adjoining LGA of Logan.

The large number of people who work from home reflects the growing demographic of professionals, creative and ICT-based businesses that work locally, nationally and internationally, attracted to the lifestyle that the Gold Coast offers.

Digital hub opportunity

EMDA modelling has estimated the initial demand (based on ABS statistics and interview data) for a digital work hub, based on members being charged \$50 per day. Conservatively, this model estimates that 712 early adopters (commuters and locals) would initially use a digital work hub. From the EMDA survey, the total number of high and medium potential commuters, and live and work residents who would consider using digital work hubs was 5738.

With a lower daily member charge (eg \$30), it is expected that occupants will be greater in number and reflect a more permanent base. Uptake by local high-medium potential knowledge workers is more likely to be 10% than 2% and uptake of at least 30% by commuters. This is based on the literature, case study results, co-location benefits, experience with coworking spaces elsewhere and trends to increasing use. The following tables show benefits to the Gold Coast region for each 120 member digital work hub.

Community and personal wellbeing

Productivity gains for employers and quality time gains for individuals and families, with notable reduced time for children in day care and after school care facilities. However, the additional health and wellbeing from reduced commuter stress, time to exercise and time available to spend volunteering in community is another asset to the region, with quantifiable benefits outside the scope of this work.

Gold Coast digital work hub users

Gold Coast digital work hubs (EMDA survey results)	Commuter users (high and medium potential selection criteria)	Local users (high and medium potential selection criteria)	TOTAL workers
Potential (high and medium)	2,467	12,041	14,508
Consider using digital work hub (survey)	1,590 (64%)	4,148 (34.4%)	5,738
Digital work hub estimate (120/hub @\$50/day) = 6 hubs	441	271	712

Gold Coast digital work hub productivity gains

Gold Coast (120 person model)	One digital work hub at 3.5 days per week	Four (4) digital work hub (model)	Eight (8) digital work hub (model)
Total number of work days at the centre per week	420 (120 x 3.5 days)	1,680 days	3,360 days
Ratio commuter : local users	62 C : 38 L	62 C : 38 L	62 C : 38 L
Number of days per month in centre by commuters and locals	1,041 C + 638 L	4,164 C + 2552 L	8,328 C + 5104 L
Total km saved per year by commuters	2,348,414	9,393,656	18,787,312
Total commuter hours saved per year	29,147	116,588	233,176
Additional free time on community activities per year for commuters	4,234	16,936	33,872
Car accidents saved per year	1.0	4.0	8.0
Greenhouse gas savings (kg)	599,550	2,398,200	4,796,400
Direct full time equivalent jobs created to service digital work hub workers	84	336	672
Indirect full time equivalent jobs created to service digital work hub workers	67	268	536
Direct value add	\$10.7M	\$42.8M	\$85.6M
Indirect value add	\$8.5M	\$34M	\$68M
Total value add	\$19.2M	\$76.8M	\$153.6M

Further, exposure to a wide range of entrepreneurs and small businesses via a collaborative workspace provides mentoring and knowledge workers employment opportunities for the region's youth before, during and after study.

Regional development opportunities

The Gold Coast region, currently home to around 500,000 people, is situated about 78km south of Brisbane. The region borders Logan City, Redland City, Scenic Rim Regional Councils and the NSW border to the south. The urban form is characterised by a linear collection of interspersed suburbs rather than a city with a definable centre.

The key issues for the Gold Coast include long-term employment opportunities, the needs of an aging population, high car dependency, isolated suburbs, and areas of social disadvantage and limited affordable housing. Creating alternative employment options to address youth unemployment has been a direct result of the Gold Coast economic base and lack of diversity within the job market.

The Light Rail Project (currently under construction) is a catalyst project to facilitate the future city goals of being connected, digital, liveable and competitive. The project will facilitate urban regeneration, the proximity of housing, employment clusters, supporting innovation precincts and digital work hubs.

www.hassellstudio.com/en/cms-projects/detail/gold-coast-rapid-transit-corridor-study-phase-2/

The Gold Coast's newly announced Economic Development Strategy 2023 has identified infrastructure as one of six key themes to drive economic outcomes. The Gold Coast is committed to achieving a connected and competitive economy through improved telecommunications infrastructure and signature projects such as the Active Digital City Project. This project aims to engage the community to use digital and communications technologies for better economic outcomes.

In addition, the Priority Precinct Project aims to identify and drive the development of a connected city to maximise the economic benefits from a Central Business District and specialist activity centres through increased density and business clustering. Digital work hubs provide the catalyst for clusters of knowledge workers, businesses and commuters to work in their region a few days per week. Net capital and benefits retained by regional commuters allow them to agglomerate critical economic mass.

Broadband connection (RDAGC, *Road Map* 2013, p 28) was present in 73% of occupied households in the ABS Census 2011. Digital work hubs are recommended in activity centres below to optimise infrastructure, dwelling density, employment centres and transport networks.

The principle, major and district activity centres across the region include:

- Southport and Griffith University/Hospital Precinct
- Robina/Varsity Lakes
- Coolangatta/Tweed Heads, Broadbeach, Nerang, Coomera
- Surfers Paradise, Helensvale, Runaway Bay, Burleigh, Palm Beach.

A step ahead

The private market on the Gold Coast has already established four coworking centres, with strong interest and indication of more opening soon. The emergence of these centres allows Gold Coast residents to work productively in their home city, through the use of modern ICT.

The centres all have a distinct unique market edge, clearly with overlaps:

- Cospaces – Southport www.cospaces.com.au
- Silicon Lakes – Robina www.siliconlakes.com.au
- Gold Coast Coworking – Southport www.goldcoastcoworking.com
- Work Club – Surfers Paradise www.workclubgoldcoast.com

As seen overseas, this enable individuals to find the design and community that best fits with their needs. Of note is the approach taken by the City of Gold Coast Economic Development team to provide funding towards running events (eg StartUp weekend) and ensuring that all relevant innovation hubs are working in a collaborative effort to achieve the same objectives for the city. Events form a strong part of building the overall community/culture within a region and people and groups start to build trust and credibility.

The centres have a dominant permanent membership base and have yet to capitalise on the commuter market – stating a lack of large organisational tools for managers to facilitate this as a telework option at this stage. However, with a telework toolkit released in October 2013 and a trial of Queensland State Government employees to telework in centres in 2014, this is expected to develop rapidly as an option for large organisational employees.

The strong emergence of innovation hubs across the city including coworking facilities, incubators and tech groups has created an ideal environment for the Gold Coast to use the four coworking centres to deliver a coordinated approach to the development of a connected, dynamic and innovative community.

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