THE BLUESKY FORUM

Smart Cities for Ultimate Traveller Experience

Wednesday, 6 March 2013
OJW – S Block Level 12, QUT Gardens Point Campus

This document provides a summary of the inaugural BlueSky Forum.
The forum seeks to unite the expertise of academics, government, and industry professionals to generate ideas and scope for innovative projects. The open interactive workshop aims to generate innovative ideas for solving grand challenges in future sustainable, smart, and adaptive cities for ultimate experiences in commute, transports, and mobility. The topic is strongly aligned with The Science and Engineering Faculty, and Institute for Future Environment's "Intelligent Environment and Adaptive Community" theme. The forum places a strong emphasis on the application of scholarly excellence to 'real world' issues (QUT Blueprint).

The event has a full registration, with a mix of: 30 industry/government/entrepreneur; 20 academics; 20 students; and 10 demo presenters

We are privileged to feature 5 exciting panelists:

1. Daniel Suter - Road Operations Coordinator,Department of Transport & Main Roads.
2. Ben James - Airline Development Manager, Brisbane Airport Corporation
3. Nandor Locher - Manager, eCommerce, Virgin Australia
4. Alexander Dreiling - Chair of Future Airport Innovation, QUT
5. Simon Washington - Chair of Transport and Main Roads, QUT

The forum hosts participants from government, industry, and research, including RACQ, OLEV Australia, Verdant Vision, Bombardier, Brisbane Marketing, CMD, Stewartparks, Smart Services CRC, Queensland government (DEEDI, DIISRTE, Office of the Queensland Chief Scientist), University of Queensland, and Griffith university.

The forum is intended to cover emerging themes for smart city and smart mobility, including:

- Real time, social, mobile, multimedia data
- Ubiquitous computing - smart phones, embedded technologies, sensors
- Innovating the interactions with environment and transport (mobile apps, gamification)

The key outcome of this forum is to establish a suite of projects (short term to long term) that will address the identified key challenges, and generate opportunities to alleviate these issues, and meet the requirements from the growing city of Brisbane and beyond.

We would like to thank all participants for their time and supports; we trust that the forum will unleash many bright ideas for our future city and transport.

It is important that we continue to build the momentum from this event, and we are looking for champions and sponsors to support the follow-up project(s) to address the identified challenges and opportunities – Please contact us to discuss how you want to be involved.

Best regards,
Dian Tjondronegoro, Edward Chung – Chairs of the BlueSky Forum
Contact: dian@qut.edu.au

QUT Mobile Innovation Lab I Smart Transport Research Centre I Information Systems

Profiles of the Panelists

Alexander Dreiling
Associate Professor, Chair in Airport Innovation – QUT

Alexander Dreiling has been driving IT and business innovation for the past 15 years in both industry as well as academia. Prior to joining QUT he worked for the global IT company SAP in various local and global leadership roles, where he successfully motivated, evangelised and executed the development of new products and technologies. He did this drawing from a range of experiences at prior employers including Continental AG, Fiege Logistics and Ingersoll-Rand. Alex received a Bachelor, Master and PhD degree from the University of Muenster in Germany. His academic work has so far led to more than 40 refereed publications in leading academic journals and conferences. Based at QUT's Information Systems School, the highest ranked research group of its kind in Australia and together with Brisbane Airport Corporation, Alex will explore improving airport passenger and visitor experiences using emerging communication channels and social media networks.

Ben James
Airline Development Manager – Brisbane Airport Corporation.

Ben James is the Airline Development Manager for Brisbane Airport. He works with the airlines of Asia and the South Pacific to develop new and better air services connecting Brisbane to the world. He holds a Bachelor of Tourism from the University of Canberra and a Graduate Diploma in Management from Melbourne University. Ben has been with Brisbane Airport Corporation since 2005 and has recently returned from two years on exchange working at Amsterdam Airport Schiphol in the Netherlands, which owns 20% of Brisbane Airport. In Amsterdam, he was responsible for developing services to Schiphol from across Western Europe and North Africa including with national carriers, low-cost airlines and charter airlines. Through his roles developing air services, Ben has worked with in partnership with a range of tourism organisations including Tourism Queensland, Tourism Australia, Visit Scotland, Tourism Ireland, Tourism Holland, Auckland Tourism and the South Pacific Tourism Organisation. Ben has been a guest lecturer in the University of Queensland and James Cook University's tourism programmes and in the Masters of Destination Management programme at the National School of Tourism and Transport, a part the University of Breda in the Netherlands. For either work or pleasure, he has travelled to 47 countries and all inhabited continents and will go to three new countries this year.

Nandor Locher
Manager, eCommerce - Virgin Australia

In his role as Manager E-Commerce Nandor heads up Virgin Australia's E-Commerce department and is responsible for the development and execution of the Group's online and digital strategy. This includes multiple websites, mobile applications and online booking engines for the various entities of the Virgin Australia Group. Further, Nandor is responsible for ancillary revenue generated through the various distribution channels. Nandor has a background in program management, business transformation and distribution capabilities, predominantly in the aviation industry. He has been with Virgin Australia for 9 years and has held several senior roles. Major achievements include program managing the start-up of V Australia (international long haul airline), the launch of Velocity Frequent Flyer and the implementation of a new reservations platform. Nandor holds a Bachelor degree in Mechanical Engineering, a Masters degree in Business & Manufacturing Engineering and is a certified Project Management Professional (PMP). He commenced his career with IBM in Switzerland. Nandor is passionate about the online travel industry, a very dynamic and competitive sector in the online space. There are many exciting opportunities and emerging technologies that will continue to drive airlines to be at the forefront of innovation.

Daniel Suter
Road Operations Coordinator - Department of Transport & Main Roads

Daniel has over 10 years experience as a traffic engineer both in the government and private sectors and his area of expertise is in traffic signals. He has worked on all aspects of traffic signals ranging from their initial design right through to their ongoing operations and maintenance. Daniel has experience in signal modelling using Sidra and Transyt-7F, designing signal hardware and cable connection plans, programming traffic signals personalities, overseeing the construction of signals and operating signal networks using SCATS & STREAMS. Daniel is currently the Road Operations Coordinator for the South Coast Region of the Department of Transport and Main Roads. He oversees three main areas: the ITS&E team that builds and maintains the ITS equipment used to manage the road network; the Network Optimisation team that optimises the traffic signal network to ensure it operates as reliably and efficiently as possible and the Traffic Management Centre that actively manages the road network to ensure traffic incidents & equipment faults are resolved quickly and that motorists are given accurate information to make informed route choices. Daniel has a passion for network management, has been involved in Austroad Projects related to network performance and recently wrote a joint paper on the use of traffic data to optimise arterial network performance. As a Gold Coast local Daniel is looking forward to playing his part in preparing the city to host the Commonwealth Games in 2018

Simon Washington
Professor and TMR Chair – QUT

Professor Washington holds the Endowed Transport and Main Roads Chair at the Queensland University of Technology. He is recognized internationally for his contributions in the fields of behavioural econometrics applied in the areas of transport and urban planning, transport safety and risk across all travel modes, and travel behaviour. He is Associate Editor of three leading international transport journals (*ASCE J Trans Eng*; *Korean J Trans Eng*; and the *J of Anal Meth in Acc Res*), Editorial Board Member of four leading international journals (*Acc Anal & Prev*, *Trans Res A and C*, and the *J Trans & Stat*), and Founding Editorial Board Member of the *J Sust Trans*. He has authored or co-authored about 80 peer-reviewed journal articles and conference proceedings, a 2nd edition of a textbook adopted in over 20 countries (564 citations), and 6 book chapters. His work has been cited more than 2100 other transport researchers. He has been lead CI on $26 Million on externally supported research and has secured nationally competitive research grants in both Australia and the US including the US National Academy of Sciences, Cooperative Research Center (Aus), the National Highway Traffic and Safety Administration (US), and the Federal Highway Administration (US). Prior to joining QUT he served on the faculties of UC Berkeley, Arizona State University, the University of Arizona, and the Georgia Institute of Technology. He has or is serving on the boards of two transport related start-up companies.

Agenda

5-6pm: Networking + Demo

6-7pm: Welcome, Panel keynotes, Q/A and discussions, Identifying key themes for discussions

7-8pm: Workshop - break out discussions (smaller groups), short presentation of ideas, finalising the key action lists (with people in charge and sponsors)

Please use **#blueskyforum** for this event

Profiles of Chairs

Dian Tjondronegoro
Associate Professor, Head of Mobile Innovation Lab – QUT

Dian established and currently lead Mobile Innovation Lab (since 2010), which currently hosts two postdoctoral research fellows, ten PhD students, and three research assistants. The team works with three Cooperative Research Centres: Smart Services CRC (smart video optimisation for mobile and multi-channel delivery), CRC for Rail Innovation (mobile technologies for delivering real-time transit information and mobile payment), and Young and Well CRC (mobile tools for promoting health in young people, including awareness, treatment and prevention). The impact of his work has earned him a reputation of being a "fantastic innovator - Someone with ideas, someone who gets things done, but most importantly someone who creates pieces of innovation that are slick, smart and wow our customers every time." (Dr. Julien Vaysiere – head of research, Smart Services CRC, 2010). Dian has published over 88 academic publications in mobile multimedia field, and is the current coordinator of short courses for professionals in mobile computing series, as well as the undergraduate and postgraduate courses in "introduction to mobile computing" and "mobile apps design and development", enrolled by more than 60 students each semester. Dian has won several teaching awards from the Faculty and University, and is known for his passion in mobile and ubiquitous computing, as well as analytics of socio-mobile multimedia data.

Edward Chung
Professor, Head of Smart Transport Research Centre – QUT

Professor Edward Chung is the inaugural Director of the Smart Transport Research Centre with many years experience as an engineer and an experienced academic and researcher working both nationally and internationally in the application of Intelligent Transport Systems (ITS). Appointed to QUT in 2009, Edward is focusing on leading research to realise the benefits of real time travel information provision in reducing congestion. He was previously Head of the ITS group at Laboratoire des Voies de Circulation (LAVOC) at Ecole Polytechnique Fédérale de Lausanne in Switzerland, where he led large project teams on traffic and safety monitoring in Europe. He is also a visiting professor at the Advanced Mobility Research Centre (ITS Centre) located at the University of Tokyo.

Summary of Keynote Addresses: From Airport, Airline, to Transport and Main Roads

Alexander Dreiling:
"Small idea will make big impact as BAC has 20M visitors every year"
"Mobile phones provide direct communication channels, next thing after Web and social media"
"The elephant in the room is now how to focus on the customers, and increase the B2C channel. Today, 80% of airport's business is B2B, 20% is B2C."
"Airport is pushing towards Integrated technology around customer"
"Integrated digital platform: collection of digital assets that make sense for travellers and those who drops off or pick up people and manage the experience to be more pleasant".
"We cannot do anything against delays, but we can manage the follow-on effects, while people are waiting for you in meetings or those picking you up".
"We cannot do anything against the safety and immigration procedures, but through technology, we can decrease the level of stress and anxiety"

Ben James:
"I'm only a technologist in the end-user sense. My background, however, is in Tourism and Travel, here in Aus, in the US and in Europe and I spend a lot of time up in the Blue Sky, and in travel and tourism, we are acutely aware that we are technology is the great enabler of our industry. From wind to wheels, from wheels to wings and all the associated hard and soft technologies, travel has been changed in size and scope by advances in technology"

"In contrast, what haven't changed are the fundamentals stages of the journey. Whether you look back at history's first organised travellers, who would have been religious pilgrims to places like Santiago de Compostella, Mecca and the Ganges, or you look at today's tech'ed up Gen Y/Gen Z flashpackers who live on-line and in your pocket, the journey stages of: Anticipate – Go – Experience – Return – Remember, are still what tourism and travel are built upon, no matter how much the details within those stages have changed beyond recognition"

"The other crucial understanding of the travel industry is that it's a service industry. The "products" of the essential tourism ingredients of transportation, accommodation and entertainment don't give you a thing in your hands at the end. Unless, of course, your exit through the gift shop yields a souvenir or two. And today's technology is perfectly suited to this service role as it offers two aspects that create real value, which are simplification and reach. And we all know the examples of being able to find and book a hotel on the far side of the planet in a small number of mouse-clicks and get there in a long distance aircraft with only a single stop. A huge contrast from the turn up-and-hope approach to booking and the multi-stop milk runs of only a few years ago."

"The man who once told the US patent office that "everything there was to be invented, is now in existence" is these days a punch-line of jokes at forums like this, and while it seems the traveller could not possibly wish for greater choice or ease or functionality from technology, there is one part of the tourism equation which could clearly benefit from greater technological aid – the small business Tourism has one of the highest percentages of Small-Medium businesses of any industry. These are Mum and Dad/owner-operator type businesses, with limited time, limited budgets and limited skill sets and often outside

capital cities where access to resources is a little harder. This is the part of the tourism industry, on the supply side, which is ripe for the sort of technological help that can improve product and processes and make a better tourist experience."

"Technology that can enable the small operators to spend less time on their 'back of house' requirements can spend more time out at the front of house delivering a better tourism experience, I believe, will be the next step-change in the delivering a better traveller experience through each of the stages of their journey. It will be through technology's ability to make simpler tasks and communication easier for small business that we can lift this part of the industry from 'talented amateurs' to world-class deliverers and drive the reputation of our destinations."

Nandor Locher:
"Following up from the focus on B2C, traveller and mobile devices are match in heaven".
"Mobile technology offers a new way to engage with our customers and will revolutionise traveling, and we want to do is to take on a completely customer centric view because the mobile phone is in the customer's pocket all the time "
"We are a service industry. We need to develop through the loyalty program: loyalty to airline, as we need to build customer loyalty. Beyond price point, having applications that facilitate the entire journey and help to obtain feedback"
"Our vision is to create an environment where the mobile phone becomes a combination of personal assistant and travel agent operator, at the same time. So it is an intelligent device that can provide information, at the right time, at the right location"
"It's about anticipating the next needs of the traveller, and understanding their intents"
"What we want is mobile should replace all other things in their wallet traveller pocket that are usually needed from the moment they arrive at airport check-in, to departure".
"None of the airports worldwide has really cracked it".
""Business intelligence: mobile is a part of multichannel service delivery platform that gives a source of information about our passengers, so we can give the right service"

Daniel Suter
"My work revolves around traffic operation, how we get out to work and go home. So my bluesky is about choice"
"We have network that talks to each other and to us. It's there; let's use it, beyond what we have already. All the different sources of information that talks to each other need to be integrated through a universal language".
"My vision is when you get out of your airport, you can see the traffic is normal/congested. So we can make a choice to take cab or train. We can still choose to sit in the queue or have a coffee and leave later. This choice is provided through mobile devices".
"We cannot build too many roads, so congestion is always going to be there. We need to give customers the choice."

Simon Washington
"Individual traveller makes individual optimum decision, not system optimum decision. So when we travel, we don't choose because of emission, congestion".
"Travel time is king. Safety, cost, and convenience are foremost important"
"For safety, we can measure drivers' mood using camera in mobile phones"

"Key trends: Australians are big users of social media, particularly on the phone. Smart phone has the fastest market penetration to household, even faster than radio."
"How to manage travel from start of the journey? It's all about mobility choices. Smart phones will be the device of choice in short and medium term".
"Can we understand traveller's intent without asking them? Voluntary crowdsourcing is one of a very important method. What incentives can we provide to let users inform service providers when, where, and why people travel. If we know their intent in particular time and location, we can provide the right product and services."
"How can we build personalized services into gamification is the big question. Gamification or gameful design, turning an activity into gamelike actions".

Edward Chung
Summarises the key points into two themes:

- T1: Information provision
- T2: Personalising services

Within these two themes, the panelists worked with smaller group discussions to identify key action points to be addressed in 2013.

Information provision	Personalising services

* Connectedness (Inflight connectivity)
* Transparency and accurate information (e.g. delays expected, not too late provided to customer)
* Let's stop using words – use pictures rather
  * we will have many overseas visitors
* Good choice for sustainable mobility (e.g. pollution)
  * E.g. Vehicle size
* Providing the right information at the right time, at the right place
* Trustworthy and reliable information from crowd – can we tap into the power of networked device?
* How much information are users willing to give away?
  * Customers can opt-in for a period of time to be pushed for information and send information (make it transparent)
	* Cross product (strategic) merges or alliances
	  * E.g. Delayed, stranded → offer option (booking)
	* End to end journey (door to door airline service). If we know the whole journey, provide personalised solutions
	* Intent based assistant (what/when they should do – given their intent)
	* Guaranteed level of service (thru mobile app), e.g:
	  * Incentives to try other modes (if one is crowded)
	  * Airline picks the baggage for you to your destination
	* Sustainability is more important for young people (Facebook as a social norm)
	* Gamification to get them doing what we want them to do.
	  * New moment on the flight (down time in airport and airline) "take your special moment photo".

BlueSky Forum 2013 - Proposed Projects (concurrent in March-Oct 2013):

1. Design an "Door-to-door Personalised Journey Planner" mobile service

Key challenges:
- Cross product alliances or merges
- Intent based assistant with personalised choices
- Guaranteed level of services (promoting customer satisfaction by simplifying travel)
- Try gamification e.g. offering incentives/rewards for customers to try other modalities and for being a loyal customer to a brand.

2. Providing the right information at the right time, at the right place

Key challenges:
- Transparency of when and where the information will be obtained and pushed
- Inflight connectivity
- Choices for sustainability
- Use of icons and pictures that is multi-language and culture compatible
- Trustworthy crowd-sourced information

Next Milestone is: Showcase Demo on late Oct 2013.
(There will be regular progress updates and demos for the projects)

Personnel/capacity (Need to finalise the champions and experts)
- Airport: Ben James, Alexander Dreiling
- Airline: Regan Strutt, Nandor Locher, Martin Campbell
- TMR: Daniel Suter, Simon Washington, Edward Chung
- Mobile and Service innovations: Dian Tjondronegoro, Soeren Belko, Alistair Barros
- Process innovation: Alistair Barros, Michael Rosemann
- Information provision and representations: Edward Chung, Dian Tjondronegoro,

Resouces:

Space:
- Y Block level 6 Project space at Science and Engineering Centre (confirmed until Oct 2013). This space can facilitate ongoing meetings, show demos, and collaborations. There will be workstation desks, projector, whiteboard, devices, etc. to support the project.
The project space can hold around 8-10 people comfortably to work at the same time, and the floor has a nice kitchen facility and coffee machine. The SEC has retails and swimming pool and gym, as well as the Cube (one of Australia's largest interactive display) for collaborations and showcases.

Funds:
- SEF, IFE, QUT strategic "seed" funds (need to apply) – in-kind and/or cash from industry will boost opportunities.
- Government funding (ARC Linkage, Innovation funds– need to apply).

Researchers/students:
- Dian's coursework students will propose ideas (including business plans, technical details) and develop a quick-and-small paper based prototypes in semester 1. They will build mobile app prototypes in semester 2.
- Existing HDR students may consider addressing the challenges as part of their project.