Social Innovation

Whitepaper

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Hitachi partnered with global research company Frost & Sullivan to produce a new research study on Social Innovation.

Frost & Sullivan's 'Social Innovation Whitepaper' identifies the key mega trends impacting the need for Social Innovation in Australia, defines what Social Innovation is, sizes the global Social Innovation opportunity, outlines the key success factors for delivering Social Innovation and highlights the ways in which Hitachi is delivering Social Innovation in Australia.

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Megatrends Defining Future Societies

Mega trends are transformative, global forces that define the future world, with their far-reaching impacts on businesses, societies, economies, cultures, and personal lives.

As part of this research, Frost & Sullivan has identified five critical global mega trends that are creating both challenges and opportunities for Social Innovation in Australia.

5 Megatrends Impacting the Need for Social Innovation in Australia

Connectivity and Convergence

Connected Living describes a world in which consumers use many different devices to experience compelling new services that integrate video, voice, and data services to provide access and ubiquitous connectivity anytime and anywhere.

Connected devices will proliferate in every aspect of life, with an average digital native[1] expected to have at least ten connected devices at home and more than three enterprise-enabled work devices.

The total global connected living market – comprising connected home, work and city solutions – is expected to reach US$730 billion by 2020.[2]

In Australia, increased connectivity within workplaces is transforming the work environment (through technologies such as telepresence, unified messaging, remote desktops access, virtual private networks (VPNs), audio/web/video conferencing tools, enterprise mobile apps, bring your own device (BYOD) practices, web-based project collaboration tools, cloud-based syncing and sharing services).

Australia also boasts a digitally literate population, with a track record of being early adopters of technology; thus driving greater opportunities in the connected home segment. According to the 2015 'Global Payments Evaluation Study', over two-thirds of Australians already own a contactless payment card; making Australia the number one ranked country for both contactless awareness and usage rates in the 16-country study.[3]

> The global connected living market – comprising connected home, work and city solutions – is expected to reach US$730 billion by 2020.

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1   Person born in the age of digital technology and as a result, familiar with the use of the Internet and computers from an early age. Term coined by Marc Prensky, 'Digital Natives, Digital Immigrants', October 2001
2   Future of Connected Living, Frost & Sullivan, April 2014
3   'Australia leads the way for contactless ownership and usage', RFi Group, 13 May 2015

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Several other indicators point to a very high level of digital engagement in Australia. 69% of Australians are active on social media.[4] 93% of adults use the Internet or own a smartphone (as compared to the global median of 67%).[5] Retail e-commerce sales are estimated to have surpassed $10 billion in 2015.[6] The Internet of Things (IoT) in the Home market in Australia is forecast to grow at a compound annual growth rate (CAGR) of 28% from 2014 to 2020, with total revenues reaching over A$1 billion by 2020.[7]

One of the areas where Australia has achieved first-mover advantage globally is in the development of the connected workplace in harsh operational environments, such as mine sites. For example, autonomous haulage trucks, automated drilling rigs, remote operations centres, advanced condition monitoring and process simulation systems and driverless trains have been shown to result in significant gains in equipment utilisation, mine throughput, worker safety and overall profitability.

Smart is the new Green

Green products and services will be increasingly enhanced or even replaced by smart products and services, with intelligent sensing technology and internet connectivity driving better optimisation. Enabled by IoT, machine to machine (M2M) communication and over 80 billion connected devices globally, digital intelligence will be the key driver of efficiency and sustainability across a vast array of applications, with the 'smart city' being one of the larger applications.

Smart cities are cities built on 'smart' and 'intelligent' solutions and technology that lead to the adoption of at least 5 of the 8 following smart parameters—smart energy, smart buildings, smart mobility, smart healthcare, smart infrastructure, smart technology, smart governance and education and smart citizens. The primary emphasis of the smart city will be to increase the productivity of its citizens, enhancing its competitiveness, whilst making the best use of scarce natural resources.

In Australia, 93% of adults use the Internet or own a smartphone (as compared to the global median of 67%).

4   Sensis Social Media Report, June 2016
     https://www.sensis.com.au/about/our-reports/sensis-social-media-report
5   Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies,
     PewResearchCenter, Feb 22, 2016 http://www.pewglobal.org/2016/02/22/smartphone-
   ownership-and-internet-usage-continues-to-climb-in-emerging-economies/
6   Australian Retail Ecommerce Sales to Top $10 Billion in 2015
     http://www.emarketer.com/Article/Australian-Retail-Ecommerce-Sales-Top-10-Billion-
     2015/1011823
7   Australian IoT in the Home Market 2015, Frost & Sullivan

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Smart cities are expected to create huge business opportunities, with a market value of US$1.57 trillion by 2020. [8] However, smart city discussions tend to mostly revolve around technology, platforms and connectivity, and less on other key elements such as citizens, culture and neighbourhoods. That is why, given the changing needs of citizens, the future vision of smart cities needs to be more holistic and more resilient.
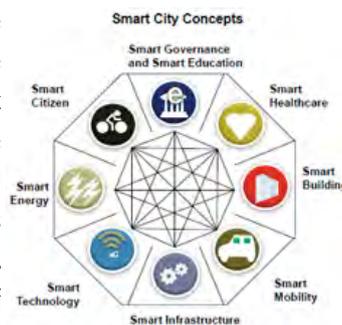
In Australia, the urban population as a percentage of the total population is already amongst the highest globally (~90%). [9] The populations in state and territory capital cities are projected to more than double from 2011 to 2061. [10] This increased burden on the main cities in Australia will strengthen the business case for smart city solutions in the main Australian cities.

Health, Wellness and Wellbeing

Future patient-centric healthcare systems will see patients having more access to health information than ever before, which will lead to patients taking enhanced personal responsibility for their health, but with greater demands on the provision of healthcare services. With technologies like smarter drugs, personalised medicine, virtual hospitals and electronic health records, the healthcare industry is poised for a radical change, with information technology (IT) leveraged much more extensively across the healthcare spectrum.

In addition, the wellness mega trend will drive a shift from remedial to predictive and preventive care. Information-driven medicine – powered by mobile phones, the Internet and healthcare wearables – will make health information much more widely accessible.

In Australia, the most significant social mega trend is that of the ageing population. As a proportion of the total Australian population, the population aged 65 years and over is projected to increase from 14% in 2012 to 22% in 2061. [11]

> ## Smart cities are expected to create huge business opportunities, with a market value of US$1.57 trillion by 2020.

8   *Top Global Mega Trends to 2025 and Implications to Business, Society, and Cultures, Frost & Sullivan, May 2014*
9   *Australian Bureau of Statistics, 2011 Census, 88.9%*
10 *Australian Bureau of Statistics, 2013 Series B projection*
11 *Australian Bureau of Statistics, Population Projections, Australia, 2012 (base) to 2101, Series B*

This will potentially significantly increase the burden of chronic diseases. Around half of all Australians now suffer from a chronic disease, with around 20% affected by at least two.[12] As a result of chronic diseases and lifestyle-related illness, the burden on the Australian health and aged care system will increase; thus accelerating the move towards digital health solutions that can support the earlier diagnosis, treatment and even prevention of these conditions.

Future of Mobility

Intelligent mobility has three major goals – safer (reduced fatalities and incidents), leaner (reduced congestion and delays) and greener (reduced carbon emissions) mobility. Future populations will want to move around in ways that are safer, more efficient and less environmentally-impactful than current transport solutions.

The significant challenges in delivering intelligent mobility are likely to be addressed by advancements in the field of advanced connectivity, autonomous driving solutions and the wider use of mass transit solutions such as high-speed rail.

Take for example, the rail sector: globally, there will be a 77% increase in the length of high speed rail networks over the period 2012 to 2022[11], owing to the significant economic and regenerative benefits it can bring. This transit orientated development will create a new network of high-speed rail and transportation hubs, where areas are established or redeveloped and witness an increasing demand for housing and services, as they become increasingly attractive for commuting through reduced journey times, driving investment in housing and other infrastructure.

In Australia, the population concentration on the east coast presents the opportunity for high speed rail development between Melbourne, Canberra, Sydney and Brisbane. Globally, the length of high-speed rail track is forecast to grow from 50,000 km in 2015 to over 90,000 km by 2020, with particular growth in China, and overall rail passenger kilometres are forecast to grow from 3.2 billion to 4.7 billion by 2020.[13] As the rail market continues to grow, so does the potential for new technology enabled applications within the rail infrastructure.

> As a result of chronic diseases and lifestyle-related illness, the burden on the Australian health and aged care system will increase; thus accelerating the move towards digital health solutions that can support the earlier diagnosis, treatment and even prevention of these conditions.

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11 *Rail Outlook Study 2013–2022, Frost & Sullivan, May 2013*
12 *'1 in 5 Australians affected by multiple chronic diseases', Australian Institute of Health and Welfare (AIHW), 12 Aug 2015 http://www.aihw.gov.au/media-release-detail/?id=60129552034*
13 *Social Innovation in Transport & Mobility, Frost & Sullivan, Sep 2015*

For example, railway signalling systems have the capability to dramatically increase the number of train departures within a time period, which results in a greater number of passenger journeys being made available and a more efficient utilisation of the railway network. Many operators are currently seeking ways of increasing the safety and throughput on their rail networks as passenger demand increases and signalling systems such as European Train Control Systems (ETCS) make this happen. Additionally, by harnessing energy which is generated during train braking, the overall energy consumption of the railway is reduced. Reduced energy consumption - by capturing and using the regenerated energy - is good for operators, passengers and for the environment. Intelligent analysis of rail infrastructure can also assist rail operators and maintenance providers in improving asset utilisation and maintenance through predictive analytics and maintenance. This leads to a more efficient, lower cost and more reliable railway network, which benefits both the railway operator and the passengers.

In terms of mobility, Australia faces the twin challenges of (1) a large geographic spread with great distances to be covered and (2) high urbanisation levels that place a significant burden on the transportation infrastructure of the major cities. For example, in Australia's capital cities, the avoidable cost of congestion was around A$16.5 billion in 2015 and this is projected to rise in a 'business-as-usual' scenario to A$30 billion by 2030.[14] Underlining the challenge of lengthy commutes is the fact that nearly a quarter of Australian commuters travel for 45 minutes or more one way to work.[15] Apart from costs and time implications, safety is another key parameter that is impacted by the growing demands on existing transportation infrastructure. A comparison of road death rates for OECD nations showed that Australia had a rate of 5.13 per 100,000 population in 2013, while some other OECD countries had significantly lower rates (Sweden 2.72 and United Kingdom 2.76).[16]

> In Australia's capital cities, the avoidable cost of congestion was around A$16.5 billion in 2015 and this is projected to rise in a 'business-as-usual' scenario to A$30 billion by 2030.

14 Traffic and congestion cost trends for Australian capital cities, Bureau of Infrastructure, Transport and Regional Economics (BITRE), Nov 2015
    http://bitre.gov.au/publications/2015/is_074.aspx
15 Lengthy commutes in Australia, BITRE, May 2016
    http://bitre.gov.au/publications/2016/files/rr_144.pdf
16 International Road Safety Comparisons—Annual, BITRE, Aug 2015
    http://bitre.gov.au/publications/ongoing/international_road_safety_comparisons.aspx
17 Contrary to a traditional linear economy, the circular economy reclaims used materials and recycles them as secondary raw materials for new products

Public and enterprise interest and acknowledgement of cyber events and risks have undoubtedly increased.

Innovating to Zero

Innovating to zero is a vision of a zero concept world with 'zero emissions', 'zero accidents', 'zero fatalities', 'zero defects', 'zero waste', 'zero breaches' of security and so on.

For example, communications based train control systems (CBTC) have the capability to increase the number of train departures within a particular time period and offer significant power savings. Big Data analytics of sensors/RFID/devices, mobile web, social interaction, HD video and GPS/spatial data will also help rail organisations to improve asset utilisation, workforce productivity, customer retention and risk management. 'Zero security breach' is another goal that is increasingly on the priority list of public and private sector organisations, especially with intensified global political, social and economic instability, coupled with the increasing number of high profile extremist/terrorist attacks, evolving attack methodologies and the increasing number of lone wolf aggressors. In addition, public and enterprise interest and acknowledgement of cyber events and risks have undoubtedly increased, as highlighted by the increased online search activity on cyber security subjects.

In the context of disasters, the concept takes the form of 'zero delays' in response or 'zero errors' in disaster management. Apart from countermeasures and risk reduction strategies to minimise the impact of disasters, countries such as Japan are taking the lead in sharing best practice on developing disaster resilience and effectively responding to critical incidents.

The key difference between the 'zero' vision and the thinking of the past is the shift towards targeting the complete elimination of the unwanted consequence (aiming for zero) as opposed to targeting incremental change (aiming for step by step improvements). This is a key area where we see the opportunity for Social Innovation business to make bold and visionary change in the world.

However, there are implementation challenges and unforeseen consequences that add another layer of complexity to such initiatives. For example, with the end of coal-fired power generation in South Australia in May 2016, the 'zero coal' scenario now presents the state with the challenge of managing and maintaining stability in electricity prices and contending with variable generation from renewables.

The Social Innovation Opportunity

These five mega trends will define our global societies in the future. That means defining both the opportunities for future advancement and the social challenges they will present. This makes it all the more critical that the concept and practice of Social Innovation be understood and embraced.

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What is Social Innovation?

Frost & Sullivan defines Social Innovation as "the deployment of technology and new business models to bring about real positive change to the lives of individuals and societies, creating shared value."

Hitachi's Social Innovation Business resolves issues faced by society and customers by combining advanced IT with infrastructure technologies, allowing Hitachi to provide total solutions. In both definitions, the emphasis is innovation and on positive change or enrichment of society.

On the one hand, Social Innovation has strong links to the concept of creating shared value (CSV). CSV has a major role in society and has many stakeholders – companies, social enterprises, governments, NGOs, charities academic institutions and public sector organisations to name but a few. Several companies have embraced and defined Social Innovation to drive their CSV strategies, and this. In Hitachi's case, this is an integral part of its corporate social responsibility (CSR) program and forms the foundation of its systems integration (SI) offer in the market. Meanwhile, other interpretations focus more on the business value of innovation to deliver advancements for society by opening untapped markets with profitable business models. A number of companies have developed multiple products and solutions around this theme of growth, while supporting societal and community initiatives.

Other companies operate at the intersection of CSV and business value creation.

Through the model of creating shared value for multiple stakeholders, Social Innovation will represent a global market opportunity of US$2 trillion by 2020.[18] However, the true value of Social Innovation will need to be measured through its impact on society and on individual's lives. Understanding these benefits and impacts is where Social Innovation starts to pay back for those corporations, governments and societies that have invested in it.

18 Frost & Sullivan estimates; 5% of the $40 trillion contributed to GDP in 2020 by sectors with the greatest need for Social Innovation (Energy, Water, Transportation, Healthcare, Manufacturing, Construction and Natural Resources)

> Social Innovation is "the deployment of technology and new business models to bring about real positive change to the lives of individuals and societies, creating shared value."

> Over US$2 trillion of global Social Innovation opportunity by 2020.

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There are a diverse range of technologies, solutions, services and collaborations that Hitachi has deployed in Australia that are having a definable impact.

Critical Success Factors in delivering Social Innovation

While the past decade has been categorised by perhaps the highest levels of technology innovation in history, the years ahead will be categorised by the need for business model innovation and, in particular, the need to harmonise multiple types of innovation to address complex and interlinked global societal challenges.

It is not just about collaboration to reach customers, but about creating shared value every step along the value chain and sharing the principles of Social Innovation with all suppliers and partners. This depth of collaboration is inspired by the fact that Social Innovation is: (1) Multi-functional and multi-disciplinary and aligned to solving problems across multiple departments, stakeholders and often even countries. (2) Driven by demand (i.e. the imperative to address society's challenges) rather than supply; meaning that all solutions and services must be developed from the perspective of the customer. (3) Based on tailored solutions and services due to the unique issues facing each and every customer. (4) The result of high levels of innovation and often involving novel solutions, meaning a high degree of learning and iteration for all stakeholders resulting in circular value chains with feedback loops and continuous improvement.

Hitachi as a Social Innovation Visionary

Hitachi – a global pioneer of Social Innovation as a value proposition for over 100 years – has Social Innovation business at the centre of its mission, values and vision. With a clear focus on sustainability, society and growth, Hitachi's vision is about promoting a transition into a new phase of growth. With a strong focus on the expansion of services to deliver integrated solutions and leverage of advanced IT capabilities, Hitachi is positioning itself as both a thought leader and a market leader in the field of Social Innovation. It is well positioned to thrive as the global mega trends mentioned earlier continue to create a climate that encourages the need for Social Innovation.

Hitachi also focuses on the process of collaborative creation; a crucial element in bringing Social Innovation business to life. That means not just working collaboratively with all stakeholders, but also integrating information technology (IT) and operational technology (OT) solutions that support truly distributed intelligence, real-time decision making, optimised processes and reduced business risk.

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At a major mine in Queensland, Hitachi is testing autonomous haulage systems (AHS) to facilitate effective and efficient operation in a dynamic and complex environment.

Delivering Social Innovation in Australia

Apart from Hitachi's many exciting examples of Social Innovation in action around the world, there are a diverse range of technologies, solutions, services, collaborations and business models that Hitachi has deployed in Australia that are having a definable impact. A few such examples are outlined below:

Social Innovation in Action in Australia

Raising productivity and safety in mining: Despite the weakness in mining commodity prices, mining remains Australia's largest export earner, accounting for 54% of total export earnings in 2014-15.[19] However, the challenge moving forward is to ensure Australia retains its competitiveness as a global production hub. To do that, productivity and safety levels need to be raised.
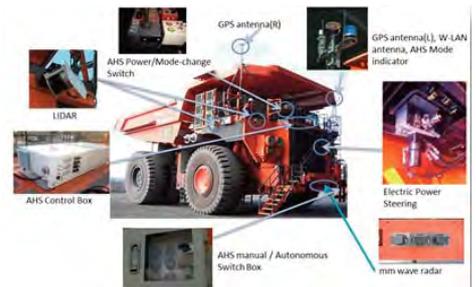
Retro-Fitting of Hitachi AC-3 Truck

In the 2014-15 analysis of productivity across various sectors in Australia, mining recorded its first positive growth in multifactor productivity[20] since 2006-07.[21]

To ensure that this is not a one-off spike, 'digital mine' solutions are being deployed by the mining industry across various mine sites in the country. For example, At a major mine in Queensland, Hitachi is testing autonomous haulage systems (AHS) to facilitate effective and efficient operation in a dynamic and complex environment. The goals of this project include enabling automated navigation, route optimisation, negotiation of traffic conditions, self-correction for unplanned obstacles (e.g. fallen rock, slip conditions), optimised acceleration / braking / steering control, site awareness and collision avoidance.

Enabling the intelligent grid: Safety audits conducted across the country have found a number of instances where ageing timber power poles fail to meet critical safety levels. With under-investment and an increasing).

19 *Department of Industry, Innovation and Science, Resources and Energy Quarterly – December Quarter 2015: Statistical data, 22 December 2015*
20 *Multifactor productivity is the ratio of gross value added to the combined inputs of capital and labour*
21 *ABS, Estimates of Industry Multifactor Productivity, 2014-15*
22 *State of the Energy Market 2015, Australian Energy regulator (AER)*

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backlog of asset maintenance, the risk of pole top fires increases and so does the cost of replacing or reinforcing ageing poles. This challenge is aggravated by the low density and dispersed nature of the network (with significant distances between demand centres. The national electricity market (NEM) alone has over 730,000 kms of electricity distribution lines and 43,000 kms of electricity transmission lines infrastructure. [22]

Hitachi Visualization Suite is being trialled by a number of utilities in Australia to leverage the Meshnet 'Safe Power Networks' IoT device installed on poles.

To monitor and report on the condition of poles across such a dispersed network, Hitachi Visualization Suite is being trialled by a number of utilities in Australia to leverage the Meshnet 'Safe Power Networks' IoT device installed on poles. This comprehensive 'Pole to Control Room' solution enables early intervention before pole instability leads to pole failure, rapid response in the event of bushfires, theft or other extreme events, remote operation of re-closures and other utility controls, as well as improved overall reliability and up-time.

Bringing precision to agriculture: The need to achieve yield and productivity gains through altering fertiliser and pesticide application rates, planting rates and irrigation flows is prompting Australian farmers to assess digital transformation tools including wireless sensor networks, Global Navigation Satellite System (GNSS), cloud computing, M2M communication, artificial Intelligence, Big Data, predictive analytics, robotics and drones. Also, the overall structural change in the Australian farming sector (marked by the exit of smaller farms) has helped drive uptake of productivity-enhancing agritech solutions, since larger farms are better placed to make necessary investments in appropriate technologies. This has helped the sector contend with not only varying climate and soil conditions, but also the ageing and shrinking pool of skilled labour working in the sector.

Hitachi is involved in facilitating autonomous farming, through a unique demonstration project for rice farming in rural New South Wales.

As part of this push to digitise agricultural practices, Hitachi is exploring how best to leverage the Quasi Zenith Satellite System (QZSS)[23] – an initiative by the Ministry of Internal Affairs and Communications (MIC), Japan – for autonomous farming, through a unique demonstration project for rice farming in rural New South Wales. By using Precise Point Positioning (PPP) for an automated tractor controlled by the QZSS positioning signal, significant benefits of improved accuracy and productivity can be achieved.

23 State of the Energy Market 2015, Australian Energy regulator (AER)

Delivering reliability and comfort in the railway sector: The affordability of rail, the relative convenience, practicality and efficiency of this mode (helping commuters avoid the cost of fuel and parking and congestion-related challenges of road commutes) and the expansion of city limits has helped stimulate rail passenger numbers in Australia. This, along with the increasing requirement for freight transport, is placing a significant burden on the country's rail network, resulting in delays, disruptions, cancellations and multiple instances of customer dissatisfaction with the service.

Technologies that address some of the key pain points of rail travel will help deliver significant positive social outcomes for Australia.

> Over 15 years ago, Hitachi introduced its tilt train technology to Queensland Rail (enabling the train carriage to tilt into curves so that the train can maintain high speeds whilst maintaining passenger comfort).

For over 15 years, Hitachi has been providing its tilt train technology to Queensland Rail (enabling the train carriage to tilt into curves so that the train can maintain high speeds whilst maintaining passenger comfort). This has helped to significantly reduce journey times for regional and rural passengers in the state, whilst maintaining passenger comfort. Hitachi also provides the traction system and other major subsystems on the Rockhampton Tilt Trains operated by Queensland Rail. Similarly, Hitachi's traction systems in the Waratah trains, operated by Sydney Trains in New South Wales, provide industry-leading performance, reliability and ride comfort.

Beyond the smart city: In keeping with the need for more holistic and resilient smart city planning, Hitachi is focused on going beyond the 'smart city' paradigm (or Urban 3.0) to that of the 'city as an organism' (or Urban 4.0); thus emphasising the evolving and interconnected nature of the city (as opposed to static and siloed city projects).

One tangible step towards enabling Urban 4.0, is the work being done on enabling the 'smart campus' or 'smart precinct'.

Campus operations require a lot of data. While technologies exist to optimise some operations – automated signage showing parking availability, smart buildings that optimise air-conditioning and electricity usage, online booking of meeting rooms, swipe cards that simplify building access and security – these systems exist in isolation. When a leading university in Western Australia wanted to improve the student experience and monitor campus efficiency, they looked at developing an analytics platform and visualisation suite to measure operations in real time and improve the student experience with contextual, data driven insights.

When a leading university in Western Australia wanted to improve the student experience and monitor campus efficiency, they looked at developing an analytics platform and visualisation suite to measure operations in real time and improve the student experience with contextual, data driven insights.

STAR Tasmania uses Hitachi VeinID systems for user authentication of the workforce, realising significant annual human resource cost and time savings, as well as the advantage of accurate time sheets and staff payments.

At the proof-of-concept level, it uses a camera network and Hitachi's biometric facial recognition and face match technology to identify individuals and track their movement on a geospatial map of the campus over time. A single analytic dashboard combines insights into people movements with smart signage, wifi tracking, and environmental sensors (light level, temperature, carbon dioxide, particulates). This makes it possible to generate contextual information about the lifecycle of a student, the day-to-day reality of a staff member, the activity pattern of a lecture theatre, the environmental health of a library, or who has to walk the furthest to buy a coffee or park a bike.

Hitachi is also exploring the realisation of its health campus ecosystem vision through scoping workshops with major developers and other stakeholders for key projects in Australia.

Enabling the smart workplace: The 'connected living' mega trend is prompting offices across Australia to seek ways to improve productivity, whilst raising staff job satisfaction levels. Technologies that free workers up to focus on their core tasks are seeing increased uptake, especially those that help eliminate onerous paperwork.

STAR Tasmania (now part of Mosaic Support Services, a leading community based organisation providing services for people with disabilities) uses Hitachi Finger Vein Authentication Technology for user authentication of the workforce, without the need for passwords. As a result, the organisation has realised significant annual human resource cost and time savings, as well as the advantage of accurate time sheets and staff payments.

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Hitachi's Research and Development in Australia

Anand Singh, Deputy Managing Director, Hitachi Australia, remarks "With around 2,600 R&D staff globally and 3.3% of total group revenues dedicated to R&D, [24] Hitachi is also amongst the Thomson Reuters Top 100 Global Innovators."[25] This allows Hitachi Australia to leverage a world-class network of R&D personnel from across the globe to help bring improved solutions for clients in Australia.

For example, Fellow of Hitachi and world-renowned mind-brain scientist, Dr. Hideaki Koizumi is an advisory board member of the Science of Learning Research Centre (SLRC) - an initiative of the Australian Research Council - and he has also been involved with the Australia Japan Emerging Research Leaders Exchange Program (ERLEP) - that supports the development of international linkages between mid-career researchers in Australia and Japan.

To nurture customer-driven innovation in Australia, Hitachi continues to invest in research that accelerates Social Innovation from the viewpoint of technology. The company's focus is on developing business opportunities through co-creation of solutions with customers and academic partners across a diverse range of sectors including mining, agriculture, healthcare and smart cities amongst others.

To nurture customer-driven innovation in Australia, Hitachi continues to invest in research that accelerates Social Innovation from the viewpoint of technology

24 FY ended 31st March 2016
25 2015 list. http://top100innovators.stateofinnovation.thomsonreuters.com/

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Conclusion

The examples we have presented show how Hitachi – a visionary global company and Social Innovation thought leader, with a long history of addressing societal challenges – is driving a successful proposition based on Social Innovation in Australia. Hitachi is also uniquely positioned as a partner that effectively combines IT and OT strengths; a critical requirement when delivering complex social innovation projects.

As with all such undertakings, it is a journey that will cover diverse ground, with varying milestones. In this journey, Hitachi is well placed to leverage its global success stories that have a demonstrable track record of achieving sustainable, transformational change.

For example, moving forward, Hitachi is exploring the potential uptake of its advanced particle beam therapy system in Australian cancer centres, its Cryst-Ena container-type energy storage system for the smart grid, and its disaster management information systems, imaging, network, security consulting, cyber and physical security offerings for security and defence applications. These and other integrated solutions, along with the new Center for Social Innovation (CSI) in Sydney, will help Hitachi deliver compelling and sustained shared value in the country and the region.

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About Frost & Sullivan

As a Growth Partnership company, Frost & Sullivan collaborates with clients to leverage visionary innovation to address global challenges and related growth opportunities that could make or break today's market participants.

Frost & Sullivan's Growth Partnership supports clients by addressing these opportunities and incorporating two key elements driving visionary innovation: the Integrated Value Proposition and the Partnership Infrastructure.

- The Integrated Value Proposition provides support to clients through out all phases of their journey to visionary innovation, including research, analysis, strategy, vision, innovation, and implementation.
- The Partnership Infrastructure is entirely unique as it constructs the foundation upon which visionary innovation becomes possible, including 360 degree research, comprehensive industry coverage, and career best practices as well as Frost & Sullivan's global footprint of more than 40 offices.

For more than 50 years, Frost & Sullivan has been developing growth strategies for the global 1,000; emerging businesses; the public sector; and the investment community.

http://www.frost.com

About Hitachi

Social Innovation starts with an idea: one simple thought that has the power to change the world. Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, brings these possibilities to life with advanced information technologies and infrastructure solutions.

The company's consolidated revenues (for the fiscal year ended March 31, 2016) totalled 10,034 billion yen.

For more information on Hitachi, please visit the company's website at
http://www.hitachi.com
http://www.hitachi.com.au

Social Innovation microsite: *social-innovation.hitachi*

Twitter: *@Hitachi_SocInn*

Hitachi Brand Channel: *www.youtube.com/user/HitachiBrandChannel*

Frost & Sullivan, the Growth Partnership Company, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make orbreak today's market participants. For more than 50 years, we have been developing growth strategies for the Global 1000, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasingcompetitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies?

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