

HITACHI
Inspire the Next

HIGHLIGHTS

Social Innovation Forum ²⁰¹⁵

APRIL 28-29, 2015
LAS VEGAS, NEVADA

SOCIAL INNOVATION
**IT'S OUR
FUTURE**

Serving the World with Our Social Innovation Business

Thanks to all of you who attended our first North American Hitachi Social Innovation Forum in Las Vegas...



Social Innovation was displayed in a multitude of ways in Las Vegas. It was a great event filled with charismatic speakers, interesting insights and discussions, and excellent networking opportunities. We hope that you left the event with a stronger understanding of Hitachi's vision of Social Innovation and how we plan to implement this vision through approaches that are:

INNOVATIVE: more customer-focused, with increasingly globalized R&D and on-site customer collaboration;

INCLUSIVE: creative collaboration with global stakeholders to accelerate the Social Innovation Business;

SUSTAINABLE: improved ways of sharing Hitachi's Social Innovation Business with stakeholders in long-term, financially sound ways.

This book aims to capture the spirit of this year's event, highlighting the key learnings from our panels and commentary from our keynote speakers. Along with gaining a great understanding of the possibilities that Social Innovation offers to your business, we hope that you find it useful as you reflect on this year's Forum. This book is also for our customers and partners who were not able to attend this year's event, with the hope that the content presented here encourages you to consider participation in future Hitachi Social Innovation events. We look forward to planning future events that continue to encourage deeper partnerships with all of you.



Hitachi's Social Innovation Business means creating advanced automobile technologies and mass transportation systems that improve safety and efficiency while reducing carbon footprint. It means creating cutting-edge biomedical equipment for treating cancer with less damage to healthy tissue, and creating high quality MR images that improve diagnostic capabilities and patient safety. It also means providing data analytics and creating information systems that improve infrastructure in urban areas and developing technologies that promote a smooth, efficient transition to Smart Grids.

Hitachi deeply values its customers and partners and feels strongly that finding the best solutions to challenges will be a process of creative collaboration. Together, we can drive innovation and "Inspire the Next." We look forward to seeing you again at future Social Innovation Forums. Thank you again for joining us in Las Vegas.

Social Innovation Showcase Impresses at HSIF

Greeted enthusiastically by EMIEW, the Hitachi robot, guests at the Hitachi Social Innovation Forum enjoyed a private VIP reception in the Social Innovation Showcase on the evening of April 28 which served as the kick-off to the whole event. The Social Innovation Showcase was the first time a majority of Hitachi's Group companies in North America had the opportunity to exhibit their products and solutions together. 27 Group companies had displays in the Showcase. Organized thematically, the Showcase had customized areas devoted to the following topics:

- Big Data Lab
- Communications, Media and Entertainment
- Energy and Earth Resources
- Healthcare and Life Sciences
- Internet of Things that Matter
- Smart City – Efficient Transportation
- Smart City – Sustainable Infrastructure
- Smart City – Public Safety
- Hitachi Group Exhibits

From driving a bull dozer in a simulator supplied by Hitachi Construction Machinery to seeing a fly's wing using Hitachi High Technologies America's tabletop scanning electron microscope to watching real time public safety information from multiple security sensors shown on a single pane of glass (a solution from Hitachi Data Systems), guests were able to gain some insight into the breadth of Hitachi's expertise and product line-up across a wide range of industry sectors. The excitement in the room was palpable throughout the event, and the Showcase provided guests new to Hitachi and those already familiar with the chance to truly see the breadth of "Hitachi Social Innovation."







In order to make clear solutions, we cannot do everything by ourselves. That's quite clear. The word "inclusive" is exactly the opposite of "exclusive." It's how we create various partnerships, not only with customers but also with many other stakeholders, including governments and public entities, to be included in our total view of the future.

Hiroaki Nakanishi
Chairman and CEO, Hitachi Ltd.

Business models are changing right now. They're saying now we're going to charge insurance as a service for how much you drive and the way you drive. Wow. What a provocative new business model that we are enabling from Hitachi through our partners. That's what we're talking about—the ability of Hitachi to bring all of this together with our partners with suggestions and ideas from customers to create new, data-driven, adaptive concepts.

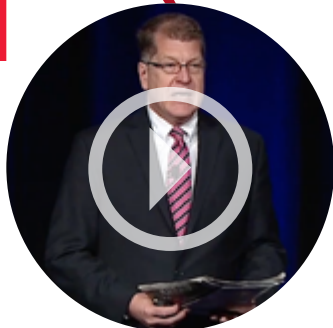
And it's not done in isolation. This is how we have orchestrated this strategy over the last six years. We have an incredible IT infrastructure bringing all of this information together. One important acquisition recently, Pentaho, has the ability to integrate data from so many multiple sources in real time to make real time decisions, then provide that in an ecosystem where somebody can use that information to make decisions or analytics, create result sets and then reuse it all again. This is the idea that we've been following for the last six years at Hitachi.

Jack Domme
Chief Executive for the Americas, Hitachi, Ltd.



Click on arrow to watch video:
Introduction To Hitachi Social Innovation Forum – 2015, Las Vegas, Nevada

01:48



PANEL #1

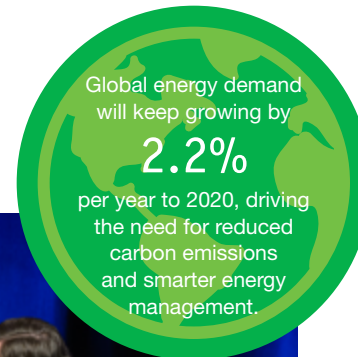
Social Innovation Business: Taking the Lead

With accelerating globalization, cross-border movement of people and goods has become routine. Many challenges are waiting for us in the fields of mobility, energy, water, aging populations and the environment. To meet these challenges, Hitachi will employ its Social Innovation Business.

The Social Innovation Business is about developing innovative, inclusive and sustainable ways of doing things. With Big Data, IT is entering a new stage of development with operational technology. Because sustainable social infrastructure must remain operational for decades, it requires combined resilient product engineering and knowledge creation supported by IT. And it must be environmentally sustainable anywhere.

The Social Innovation Business requires the participation of a diversified group of stakeholders which includes collaboration between both customers and suppliers, and business leaders must take a strong leadership role. By working in innovative, inclusive and sustainable ways, the Social Innovation Business can create value for society, people and business.

Panelists discussed how business leaders take a leadership role in the Social Innovation Business through new forms of collaborative creation.



In a world of open innovation, in a world of widely distributed knowledge, more and more of the value is going to come to those who can bring them together and do the integration, to connect this all together, to orchestrate and deliver real value and real solutions.

Henry Chesbrough, Ph.D.
Faculty Director, Garwood Center for Corporate Innovation
Haas School of Business
University of California, Berkeley



Transforming Hitachi into a Social Innovation Business

Transforming a company to become a Social Innovation Business is a monumental task, but it's made easier when the foundation is built on a mission to make a difference and a proven approach to open collaboration.

Hitachi is doing just that by leveraging new models for innovation that draw on and integrate external ideas through customer engagement and partnerships, said moderator Henry Chesbrough, of the Garwood Center for Corporate Innovation and Haas School of Business at the University of California, Berkeley.

Hitachi Chairman and CEO Hiroaki Nakanishi discussed the customer-centric approach at Hitachi that enables the company to change its business model to align with social innovation, understand the real

issues that need to be solved and create new value chains that deliver innovative solutions.

Hitachi's research and development organization is a driver of this new approach, said Norihiro Suzuki, general manager of the Central Research Laboratory at Hitachi, citing examples such as robotics, where an advanced humanoid robot demonstrates how robotics can safely co-exist, interact and assist humans, and security, where Hitachi has prototype security gates that enable better flow of foot traffic, without sacrificing security.

One of the biggest opportunities for Hitachi to drive leadership in social innovation is the Internet of Things, said Kevin Eggleston, senior vice president for Social Innovation and Global Industries at Hitachi Data Systems. Hitachi is "purpose-built for IoT" because of its unique combination of capabilities in industrial equipment and systems, as well as information technology such as data analytics that are critical for the IoT.

Hitachi has been on a 105-year mission to make a difference in the world, Eggleston told the audience. Eggleston described Hitachi's guiding philosophy as a virtuous circle – driven by the mission to do good, and by doing good to serve its investors. This, in turn, enables the company to continue to innovate in areas that will address the world's biggest problems – delivering on the goal and promise of social innovation.



03:32

Click on arrow to watch video: *Social Innovation Business: Taking The Lead*



The Internet of Things is a revolution similar to the Industrial Revolution, just like the digital revolution and the Internet revolution. But in terms of economic potential it'll be bigger than all three of those combined. Hitachi has been right in the middle of it because we're a maker of things, we're very much an IT company, but we're unique in that; we're an industrial giant as well. We're purpose-built for the Internet of Things.

Cheap, ubiquitous sensors, bandwidth, and practically free, ubiquitous computer storage has enabled this democratization of capability around the world.

Kevin Eggleston
Senior Vice President
Social Innovation Business
Hitachi Ltd.



We've got this Cloud, and we're sharing information and analytics and creating this common analytics platform using our research and core competencies. For example we're finding out certain things about the genomic sequence that's happening and we're putting that result back into the system, saving another hospital from having to repeat that.

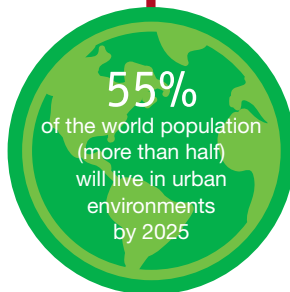
Now all of a sudden this ecosystem is creating itself, and the power and speed at which we will solve disease is unlike anything we've ever seen before.

Jack Domme
Chief Executive for the Americas, Hitachi, Ltd.

Innovating through Social Innovation, drawing upon the mind and the heart, will be a

\$2 Trillion industry

by 2020



PANEL #2

Social and Industrial Infrastructure: It's Our Future

By 2025, nearly half of the world's population will live in urban areas. With this concentration of people, cities need to start creating more robust, diversified and sustainable social and industrial infrastructures. Society and industry will require renewed social and industrial infrastructure.

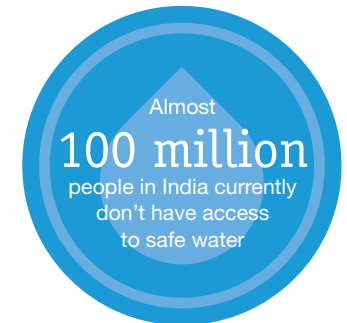
Change has begun. Today, efficient energy sources connect to urban and industrial settings through sophisticated IT. Innovation shows us that these solutions are scalable. Even more promising is the fact that the same concepts driving the creation of energy-efficient, connected urban areas can be applied to other challenges such as mobility, healthcare, clean water, waste management and recycling. The creation of smart cities is one solution.

Inclusive solutions are required. High level engineering will hold the key. We must understand the requirements in regions and industries to carry out operations that include comprehensive proposals. Collaboration within the business community will be imperative.

Panelists discussed how the Social Innovation Business can positively impact fundamental social issues including energy management, resource preservation, recycling and issues related to water. The panel also included the demonstration of a proof of concept project for energy management, built on Hitachi's concept of Symbiotic Autonomous Decentralization that offers an inclusive solution for social infrastructure.



Click on arrow to watch video:
*Social And Industrial Infrastructure:
It's Our Future*





As I think most of us know, by the year 2025 more than half the world's population is going to be living in cities and in urban areas, and I think those changes are generally positive for lots of different reasons. It provides people much more access to economic opportunity, it's a better use of our existing infrastructure, and a more sustainably built environment.

But all of these things need to be facilitated by innovative, inclusive sustainable social and industrial infrastructure.



Robert Puentes
Director, Metropolitan Infrastructure Initiative
and Senior Fellow,
Brookings Metropolitan Policy Program
Brookings Institution

The Need for Inclusive and Sustainable Social Innovation

With the onslaught of transformative demographic, economic, cultural and technological changes, panelists discussed the need for a renewed emphasis on social and industrial infrastructure, with solutions that are more inclusive, sustainable and innovative.

Moderator Robert Puentes of the Brookings Institution discussed the factors driving the need for social innovation, including energy security, climate change, infrastructure development, social equity, and underlying all of these, rapid urbanization that will result in more than half the world's population living in cities by 2025.

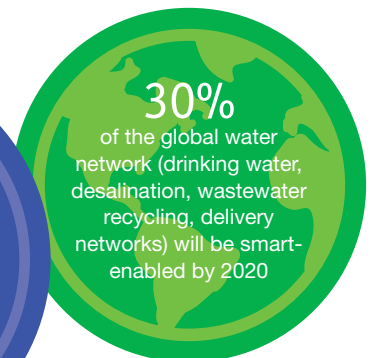
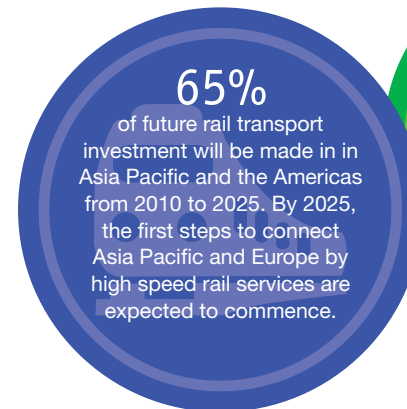
Panelists agreed data provides the greatest opportunity to address these challenges. Data is finally becoming an asset that can be put to work through analytics to drive social innovation, said Umeshwar Dayal, vice president at the Big Data Lab Research & Development Division of Hitachi America. He cited examples such as the use of data to better understand fluctuations in oil and gas production and to improve the utility of industrial machines and systems through predictive maintenance.

Hans Lindeman, senior vice president at Hitachi Consulting Corp., offered additional examples, including Hitachi's work with hospitals to use data to prevent medicine from being wasted due to poor storage management. He also cited a project with the city of Copenhagen to centralize and share data across different

agencies to help the city reach environmental and other goals.

Big data played a significant role in helping public officials in Nevada and throughout the Colorado River basin approach water management in a more holistic way, said Patricia Mulroy, senior fellow at the Brookings Institution. That new approach drove new partnerships across state and organizational boundaries to address the impact of climate change on the water supply in a more connected manner.

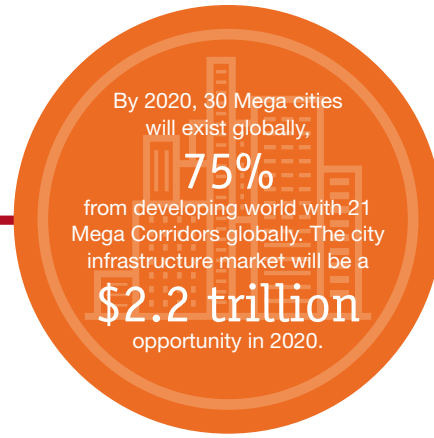
Toshiaki Higashihara, president and COO of Hitachi, demonstrated the use of data in creating an energy management system that is more resilient and expandable to address challenges related to the rising demand for electricity and an aging energy infrastructure. The demo was based on Hitachi's concept of Symbiotic Autonomous Decentralization, which Higashihara said can apply to a range of social innovation needs, from energy to water to transportation.





There are many social challenges globally. It could be water, it could be energy, it could be organization. The degree of these social challenges is prioritized differently by region due to facts, including environment and public policies. At the same time, these social challenges need to be reexamined and modified every three years, five and ten years. To solve these social challenges we need to engage with the regional stakeholders, understand their knowledge and implement technology and solutions to support existing sustainable innovation.

Toshiaki Higashihara
President & COO, Hitachi, Ltd.



Water space, whether it's here in the West or across the country, has been in a transformation now for the last two decades. For us in the West it has been in response to being in the eye of climate change and its impacts. We were so used to taking for granted the amount of water that we would annually get from the Colorado River, and we assumed that we would have full reservoirs. One morning we woke up in 2002 and everything we thought we had had disappeared. There needed to be transformation on all sorts of levels.

Using big data had us look at those who in the past had been our fiercest adversaries and competitors now as being our strategic partners. And we began to think as one geographic basin, rather than as a water supply for Nevada or for California or for Arizona – recognizing that this whole system functions together.

Patricia Mulroy
Senior Fellow for Climate Adaptation and Environmental Policy,
Brookings Mountain West
Senior Fellow, Brookings Institution

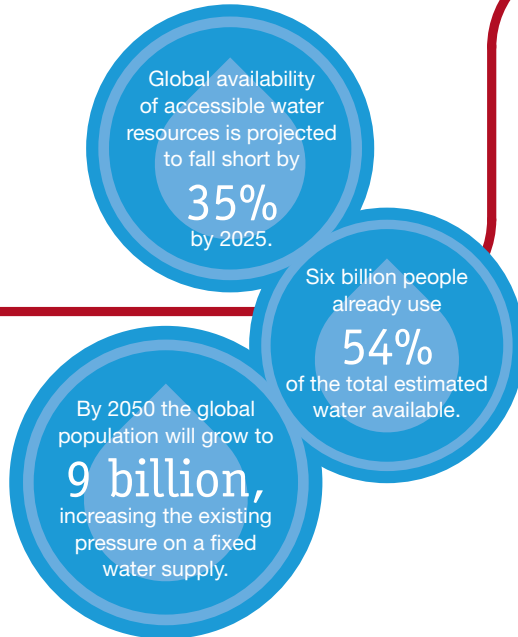


For example, we've established a couple of Proof of Concepts with some of the biggest hospitals in Copenhagen, and what we're helping them do is really understand how can they take fairly normal and uninteresting data, in this case around refrigeration units, and help hospitals manage themselves.

The other thing that we're doing is a project with the city of Copenhagen, the municipality and region. Basically we're building a big data digital infrastructure platform. This project is quite exciting for a number of reasons, the biggest is that many cities around the world have a lot of data. But they don't really know how to utilize all the data. They don't manage to pull all of the data into one central location.

This BDDI project has been set in motion to do exactly that, to help the city make greater use of its data, and reach some of its goals in becoming CO neutral by 2025, making the city a better place to be.

Hans Lindeman
Senior Vice President
Hitachi Convergence EMEA
Hitachi Consulting Corporation



There are huge transformative changes occurring in social and industrial infrastructure and we're seeing this across all industries, water, energy management, agriculture, transportation systems, industry plants, everything.

At the heart of this is data. Data used to be something that enterprises collected and hoarded. They thought this was their own private asset. Now we're really starting to see an era in which data is becoming more open. We're starting to break down silos, and more importantly put that data to work. I think this is really at the heart of Social Innovation.

Umesh Dayal
Vice President and Senior Fellow Information Research,
Big Data Lab Research & Development Division
Hitachi America, Ltd.

PANEL #3

Moving Ahead: Innovation in Connected Car and Infrastructure

Major global trends are challenging the global automotive industry to re-invent itself with efficient, more flexible, more affordable, and increasingly information-driven transportation systems. These trends include increased urbanization; a rising middle class in fast-growth, developing markets; increased environmental and air quality concerns; and new consumer behaviors, influenced by increased information/connectivity and Millennials' changing consumer preferences toward vehicles.

“For an average commuter in 2020, mobility will be completely driven by connectivity – making his/her connected living within the home, work, city, and even in the car completely seamless,” according to a 2014 Frost & Sullivan white paper on social innovation.

In response, the automotive industry is rapidly moving towards an innovative, connected environment

with inclusive infrastructure for smart control of transportation and communications. Auto manufacturers are engaging with partners in advanced IT and other industrial sectors to accelerate innovation. Likewise, public transportation networks are evolving into intelligent systems that provide operators and commuters a more safe, efficient and informed transportation experience.

Panelists discussed how our lives will be enhanced with “Connected Car” technologies made possible by smart infrastructure, smart systems and smart IT, creating the possibility of new services/businesses in many aspects driven by this core technology of the future global society.



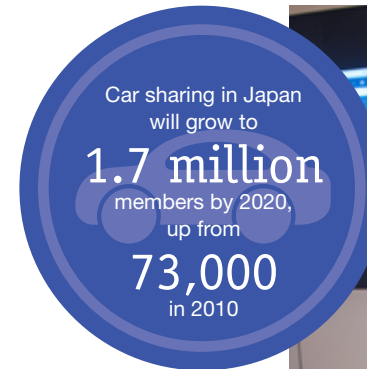
Michael Robinet
Managing Director
IHS Automotive



Physical connectivity—I’m going to seed a few thoughts for us to use. The number one usefulness of physical connectivity is that it augments human capabilities very dramatically. At 55 miles per hour, just knowing the car in front of you is breaking and seeing the lights turn red, our reaction time is at about one second. And stopping distance is about 300 feet.

And just doing this somewhat automatically, taking the human out of the loop, is going to prevent a lot of unnecessary crashes and fatalities potentially as well.

Balaji Prabhakar, Ph.D.
Professor, Electrical Engineering and Computer Science
Stanford University



Right now we only use four percent of automotive capacity. So your average vehicle sits for 22–23 hours out of the day until you want to get in it and go home or come back to work or whatever the case is.



The Road to Autonomous Vehicles and Intelligent Transit Systems

As the automobile industry continues to recover and grow, the demand for innovation is increasing – and the industry is on pace to toward achieving fully autonomous cars by 2025, according to panel moderator Michael Robinet.

For example, state of the art connected cars will progress from today’s embedded and remote update capabilities (remote diagnostics, safety and security telematics, map updates, embedded apps) to area-specific (campus and city car deployment and long-haul trucking) self-driving capabilities in 2025, to more widely available autonomous fleets in 2035 (mass transit substitutes and on demand fleets).

Panelist Balaji Prabhakar, Ph.D., of Stanford University, predicted the evolution of public transit from the 20th century paradigm where public agencies operated fleets and systems with little or no flow of information between them and commuters, to new intelligent systems that enable the exchange of user behavior data, real-time infrastructure usage data and real-time analytics.

Driven by cheap and ubiquitous sensors, an abundance of bandwidth and technological platform advances in cloud computing, big data and the Internet of Things, these advances will provide transportation agencies and operators with real time alerts,

analytics and reports, while giving commuters better tools for real time vehicle status and trip planning.

These intelligent transportation systems will enable greater engagement between operators and commuters, with increased ridership and profit for the operators and the emergence of airline-like loyalty programs for commuters. They also promise a safer and more efficient commuter experience, with better collision avoidance, pedestrian warnings, and other safety features – as well as fewer traffic jams as human factors are minimized in the driving experience.

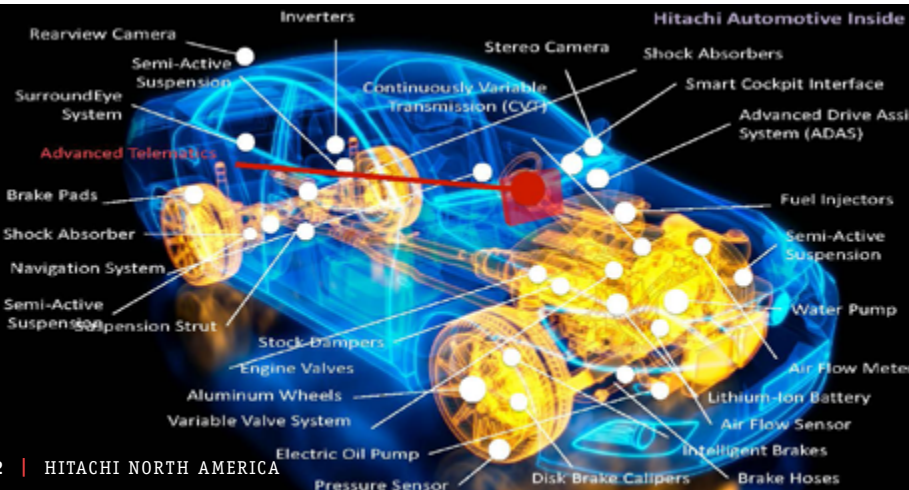
Ultimately, panelists agreed connected cars and fleets will transform the public’s relationship with transportation. Emotional ties to driving and vehicle ownership will dissipate as shared autonomous vehicles emerge, but new social benefits will be seen as the elderly and others regain their mobility and independence.



In the past few years there have been a lot of improvements in technologies, anywhere from sensors to mapping to guidance, to artificial intelligence to software architectures, and of course Cloud computing. All of these are really important seeds towards autonomy. Hitachi is very well positioned to play in many of these spaces, anywhere from sensing to Cloud computing and the like.

George Saikalas, Ph.D.
Senior Vice President R&D
Automotive Products Research
Laboratory
Hitachi America, Ltd.

By 2020, more than
40 million
electric vehicles, from
scooters to buses, will
be sold annually



There's a lot of data out there, but it really hasn't been used. There are some automotive manufacturers who are obviously very leading edge and doing a lot with data and others that are really just trying to catch up and in some cases haven't really achieved that level of insight.



We're rapidly getting there, with these new models coming out with lots of data. There's going to be a whole new world available, not just to the insurance companies but to the automotive manufacturers, where they can have deep insights not only to how the vehicle is operating, but also to valuable insights and information they can push back to their customers.



Phil Townsend
Vice President, Global Services
Hitachi Data Systems

04:46

Click on arrow to watch video:
Innovation In Connected Car And Infrastructure



Urban mobility will see
26.2 million
car sharing members and nearly
1 million
parking spaces delivering real-time parking information with sensors by 2020



As a lifetime Detroit'er and automotive guy, I think there's going to be a much deeper relationship between suppliers and automotive OEMs. Hitachi is uniquely positioned there. Looking at the fact that Hitachi Metals makes material for brake pads, which goes into our suspension system, is intelligently controlled through our telematics unit and goes into our big data cloud which we can analyze with our analytics capabilities, we really come from an automotive intelligence/Connected Car perspective. Hitachi is truly in a unique position to cover this from soup to nuts.

We look at the autonomous environment in three different areas. Number one is the self-contained car. We've got cameras, we've got sensors, we can make decisions about what's going on around us, but that gets us about five seconds forward in time to what's going to happen. Moving from five seconds to 10 or 20 seconds, we need to look at connection with the infrastructure and whether it's DSRC or some other communication mechanism that we'll use, that needs to be in place, and it's not in place now. That will get us to the 10 to 20 second window. Beyond 20 seconds, we have to look at connection to the Cloud—looking at what's happening on a broader scale, related to weather, freeze warnings, for example. All of that will be in place by 2035, and it's going to be a very different driving environment...

Paul Lachner
President, Clarion Corporation of America

PANEL #4

Connected Security: Big Data Driving New Levels of Safety

Enhanced public safety and security are critical to our global community. The need has intensified for greater collaboration among public safety organizations, as well as between public safety organizations and the citizens they protect and serve.

Solutions made possible with the Internet of Things will transform the way organizations and nations protect their citizens, property and critical infrastructure. Big Data applications including surveillance and predictive analytics let public safety organizations build real-time situational awareness and share voice, images, video and vital information as well as make investigations more efficient and effective.

To provide true and complete public safety, these solutions can also be used to more effectively protect the privacy of citizens. They will also improve the quality of life in our cities. For example, the enhanced ability to manage traffic will alleviate congestion and upgrade personal mobility.

Panelists discussed how Social Innovation will be applied in law enforcement to create solutions that collect, manage and analyze data from public and private systems to enhance public safety and quality of life for citizens.



One of the benefits that came out of these private/public partnerships and the software that we created to support them, was that a lot of time law enforcement and the citizens they're trying to protect really don't necessarily understand each other. So we get caught up a lot in the outcome of the technology. But really one of the biggest benefits was that it bridged the gap between those two groups of people in a lot of cities.

Mark Jules
Vice President
Public Safety & Visualization Solutions
Hitachi Data Systems



03:08 Click on arrow to watch video:
Connected Security: Big Data Driving New Levels Of Security



Better Policing Through Social Innovation

Hitachi is really positioned well to create a new market by leveraging some of the capabilities that we bring to bear with Hitachi visualization. For example, we are taking video archives from these proprietary sources, bringing them over into a centralized database, providing unified storage, and then coupling that with some of the new technologies like similar face search, object detection, etc. We're adding a predictive policing component to Hitachi visualization which effectively allows the police to pinpoint with a certain level of accuracy the high probability areas for certain or specific types of crime.

Darrin Lipscomb
Senior Director
Public Safety & Visualization Solutions
Hitachi Data Systems



While spending on law enforcement in the U.S. skyrocketed 445% since 1982, that investment has not produced a public safety ecosystem that is highly efficient, proactive or engaged positively with the private sector or the general public, according to panel moderator Grant Hawkins.

Against this backdrop, the panel discussed the role big data and other technologies can play in empowering police to predict crime, conduct more effective investigations and create fruitful public-private partnerships that enhance public safety.

Panelists agreed there is no correlation between public spending on law enforcement and a reduction in crime. Statistics show we can't spend our way out of crime and that increased spending on law enforcement to keep up with population growth and urbanization is unsustainable.

Law enforcement must do more with less and leverage partnerships with the private sector to stretch resources. Nowhere is this more attainable, they said, than in surveillance, where private cameras vastly outnumber cameras installed by law enforcement and other public agencies.

Hitachi, for example, is working with a police department that has integrated 1,500 cameras from private companies into its surveillance network, saving public dollars and providing better information to police who can centralize the data and run analytics against it, said Mark Jules, vice president, Public Safety & Visualization Solutions, Hitachi Data Systems.

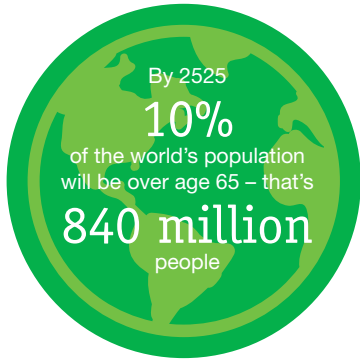
Big data can improve efficiencies in both intelligence gathering and investigations, but more importantly help shift law enforcement to preventative policing. Hitachi has implemented an analytics platform that leverages historic crime data, weather forecasts, live video and social media inputs to predict where and when crime could spike.

"Our hope is that a crime forecast will be no more difficult than a weather forecast," said Darrin Lipscomb, senior director, public safety and visualization solutions for Hitachi Data Systems.

Hitachi is also working on storage and visualization solutions, integrated with capabilities such as facial recognition, to address the data explosion that is occurring with the deployment of more cameras, including police body cameras.

We also have this opportunity with the tools we have to visualize all this data in one pane of glass. So you don't have to know how to operate six different systems or wait for an analyst who's an expert in this system to be able to pull that information out. We can combine it. We can look for the commonalities, and look for investigative opportunities and be able to react more quickly, which helps us be more proactive to not only prevent crime but be more successful in these investigations, giving the citizens more bang for the buck.

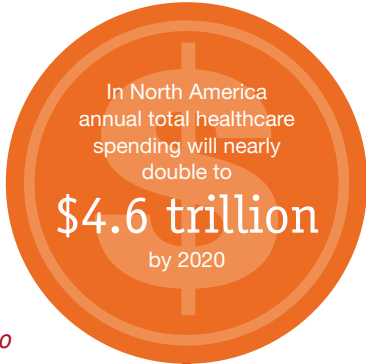
Chris Jensen
Director, Public Safety & Visualization Solutions
Hitachi Data Systems



We want healthcare to become pro-active. We don't want healthcare to be an episodic view into your life when you feel sick and you feel the need to come see us. We want healthcare to be a continuous part of your life, a continuous part of what a person's going through, and whenever we feel that there is need for intervention, healthcare is going to interact with you and make sure that we have that interaction.

So what we're hoping to do is with the power of technology and data help nurses, MA's, physicians, specialists, primary care practitioners etc. practice at the top of their license so that they're doing everything that they're trained to do.

Kamal Jethwani, MD, MPH
Senior Director
Connected Health Innovation
Partners Healthcare
Assistant Professor
Harvard Medical School



PANEL #5

Connected Care: Advancing Healthcare Through Social Innovation

Solving today's healthcare challenges requires increased focus on both advancing medical care across geographic and resource boundaries while also improving economic outcomes.

Despite ongoing technology innovation, there is still enormous opportunity to improve healthcare delivery, patient satisfaction and clinical outcomes along the entire care continuum – from prevention, screening, diagnosis and treatment/therapy to recovery, long-term care and home care. Through Hitachi's social innovation strategies, advanced research in medical technologies, systems, analytics, care coordination, personalized medicine, connected workflows and improved data sharing, Hitachi can deliver unique solutions that few others can provide.

While variations exist between hospitals in various geographic regions in terms of care delivery, costs and patient outcomes, significant healthcare savings and efficiency can be achieved by adopting the best practices of high-performing healthcare organizations as well as emerging successful ACOs (Accountable Care Organizations).

Panelists discussed real-world examples of how connected care is improving healthcare delivery and patient outcomes, as well as Hitachi's unique healthcare strategies that bridge medical and IT innovation while moving the company from a product-centric model to a solutions model that addresses some of the most pressing challenges in healthcare.

As a healthcare company provider, we have to move from providing discrete products to really providing new solutions and services, and that's what we're moving to as a company. And as we think about how to be able to do that, we need to focus on the entire disease cycle. So it's not just about diagnostic imaging or not just therapy; it's everything from prevention and lifestyle to screening and diagnosis, treatment and therapy—all the way to chronic health maintenance

Chris Japp
Chairman, Hitachi Aloka Medical America, Inc.



Project Echo is a program we have through the University of Nevada School of Medicine. It's about connectedness and working with remote healthcare.

Echo is not new technology and it's not high technology. It's a new model for healthcare connectivity, to develop these learning networks and allow primary folks to provide the care to the patients where they're at. Over time Echo's going global and the goal is a billion lives by 2025.

Melissa Piasecki, MD
Professor of Psychiatry
Senior Associate Dean of Academic Affairs
University of Nevada School of Medicine



We've spent 30 years automating healthcare, and while we're certainly more efficient or more productive, I'm not sure we're any more efficient than we were 30 years ago. The next wave is coming at us right now. And it's how do we interconnect the systems that we spent 30 years developing. It's great that I as a radiologist used to be able to read 8,000 studies a year. Now that I've automated I can read 14,000 studies and I certainly like getting paid for 14,000 studies versus 8,000 studies, but I'm not sure the results that those studies produce are any more efficient.

Bill Burns
Vice President, Global Health and Life Sciences
Hitachi Data Systems



Click on arrow to watch video:
Connected Care: Advancing Healthcare

02:24



Connectivity is the Prescription for More Effective Healthcare

Connected healthcare will take many forms: using mobile technology to closely monitor patients; using telehealth to provide remote areas with access to medical specialists; bridging the gap between clinicians and engineers to drive innovation; and connecting the disparate healthcare systems that for years have become more automated, but still separate.

Panelists discussed the range of these connected healthcare innovations and provided a look into the future of connected care. Healthcare will be insight-driven and shift from reactive treatment of discrete diseases to preventative and holistic treatment of overall health, said Bill Burns, vice president of Global Health and Life Sciences for Hitachi Data Systems.

Hitachi is supporting this transformation, shifting from selling discrete products to developing solutions that focus on the entire healthcare cycle, said Chris Japp, chairman of Hitachi Aloka Medical America. This shift in strategy includes finding new and innovative uses for existing technology, such as ultrasound, which Japp said is becoming the “Swiss Army knife” of healthcare.

Telehealth is another existing technology finally impacting more lives. Dr. Melissa Piasecki of the University of Nevada School of Medicine described the positive outcomes driven with

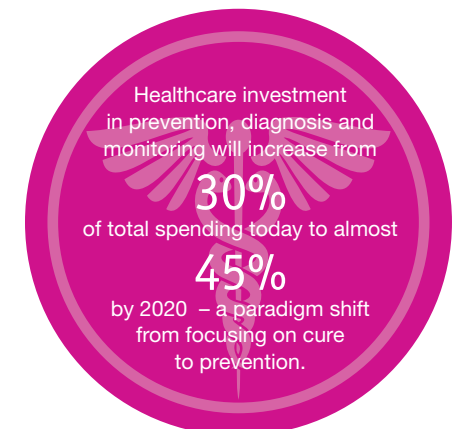
Project ECHO, a healthcare delivery system connecting specialty care and primary care physicians across vast rural areas of Nevada. The system is replicated in more than 40 sites worldwide and enables the movement of knowledge to places where it is needed, instead of moving patients.

Dr. Kamal Jethwani, senior director of Connected Health Innovation at Partners Healthcare, discussed the use of mobile technology to improve patient engagement, outcomes and efficiency. Through remote monitoring, supported by social networking, gamification, incentives and coaching, a pilot study of heart patients resulted in their improved overall health and significantly reduced readmissions, saving \$60 million in hospitalization costs.

The next wave of healthcare innovation will come from collaboration between medical and engineering students, as described by George Tolomiczenko of the University of Southern California, where a program to bridge the cultures of clinicians and engineers is creating new collaborations and innovation in health science.

Many of you may have had at one time an interest in collaborating with medical people. But many of you may have perceived that there was a moat almost between you and the medical people, and that moat divides to separate cultures. In essence what we're doing at the University of Southern California is bridging those cultures.

George Tolomiczenko, Ph.D.
Assistant Professor of Clinical Neurology and Biomedical Engineering Administrative Director Health, Technology, and Engineering Program
University of Southern California



A Personal Experience with Hitachi's Proton Beam Therapy

Many of you know Hitachi has, since the early 1990s, been a global leader in providing particle therapy used for radiation oncology treatment in cancer care.

Today, Hitachi is building smaller, more compact systems, and last year was the first in the industry to add some important clinical tools like Cone-beam CT and tumor tracking.

Hitachi has had many "firsts" in the area of particle therapy and is responsible for many different innovations in this technology. One of them was the first FDA clearance for use of active scanning beam at their installation at MD Anderson Cancer Center in Houston. In 2011 they decided that the IMPT procedure that they could now do with the active scanning could be used to treat some really complex cases that they couldn't treat before they had IMPT.

So you all have your footprint, or your fingerprint on saving my life, every one of you. And I want to thank you all for doing that.

Gerry McKim

One Person's Story: Gerry McKim

I have to admit one thing before I go any farther. Three weeks ago I didn't know Hitachi made the machine that saved my life. In the last three



days I've been honored and amazed and really gratified to learn what you do and how you're all interconnected. So I want to thank everybody in this room. You all have your footprint, or your fingerprint on saving my life, every one of you. And I want to thank you all for doing that.

I had cancer, and I survived! Right now I play golf twice a week, I swim 300 meters three times a week, and I would have not been able to do any of that with a stomach tube in. I would have not been able to do any of that if I couldn't hear or see.

And I don't know what else to say except thank you all again. You know, you made my life worthwhile. You gave me some quality of life afterwards. And I think that's what we don't do



01:10

Click on arrow to watch video:
Personal Experience With Social Innovation: Hitachi's Particle Beam Therapy

in the United States, we don't put the initial cost of doing a treatment and then adding the quality of life cost. And if you have a quality of life cost where you're going to see a doctor every week or two weeks for some side effects, well, what's that cost?

I probably talk to 20 people a month who call me and ask me, should I go to proton radiation, and I tell them: do it.

Closing Message from Toshiaki Higashihara

Today I would like to reconfirm my commitment to all of you to engaging in that collaborative creation to improve the quality of life globally. Therefore as COO of Hitachi, I'm pleased to tell you that Hitachi will be making further investment in the social innovation business here in the United States.

In addition, Hitachi will be increasing its focus on R&D activities in Americas. So we can engage in collaborative creation closer to the customers here. We believe this is the most effective way to address local problems with our partners in the Americas. At this moment Hitachi has 600 researchers at eight laboratories in the Americas.



Click on arrow to watch video:
*Hitachi's Future Commitment To
 Social Innovation In The Americas*

Our plan is to greatly expand R&D resources here. In fact, this expansion is already beginning. The most recent example is the acquisition of the Pentaho Corporation in February. With the acquisition, Hitachi has strengthened its capabilities in big data analytics. Hitachi is also planning to open a hub of its Center of Social Innovation in Silicon Valley so we can collaborate immediately with partners and rapidly utilize cutting edge technologies.

Local Leaders and Partners

We believe that business in the Americas should be created and managed by American leaders and local talent. At Hitachi, we refer to this structure as autonomous decentralized global management.

Currently, Hitachi has approximately 21,000 employees in the US, representing more than 90 Hitachi Group companies. Last year, Hitachi's sales revenue from the US was approximately \$9 billion. Our target is to double the size of our current business here. With these aggressive targets, Hitachi is also making a significant contribution to the US economy, not only in terms of hiring local talent, but by engaging in manufacturing in the Americas as well. So many

Today I would like to reconfirm my commitment to all of you to engaging in that collaborative creation to improve the quality of life globally.

Toshiaki Higashihara

of our products are truly "Made in America." As an example, Hitachi Automotive Systems contributes to the American automobile industry with six factories in the Americas region. Another example is Waupaca Foundry, which became a member of the Hitachi Group last year. Waupaca is the world's largest supplier of ferrous casting. The company is headquartered in Wisconsin and it employs roughly 4,000 people.

Collaborative Creation is Critical

Collaborative creation with partners is essential. Hitachi is actively working on developing deeper collaborative relationship with federal government, various states, regional communities, and the various research institutes. And of course we are grateful for the companies and the partners who are already working with us to resolve issues and challenges utilizing Hitachi's expertise, products and solutions.

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Inspire the Next

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