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Social Innovation in Healthcare Whitepaper

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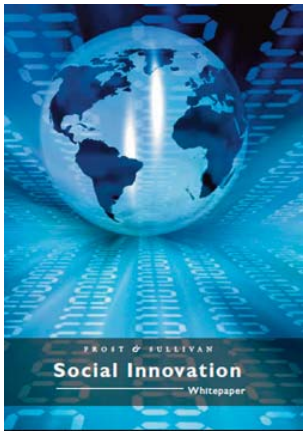
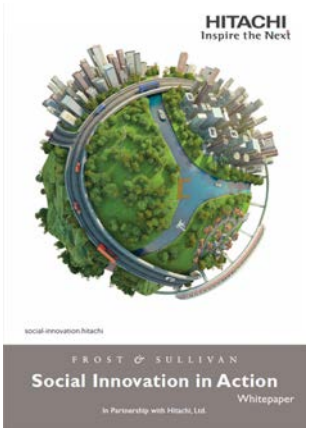
Hitachi Social Innovation





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Social Innovation Whitepapers

Hitachi has partnered with Frost & Sullivan to produce research studies on Social Innovation.
Our previous Social Innovation Whitepapers define what Social Innovation is and the key Mega Trends globally which define our future societies.

Access our Website at
http://www.hitachi.eu/en/sib/whitepapers/
to download the Whitepapers in full.

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INTRODUCTION

Social Innovation: The Need for Global Change

The Healthcare sector continues to face social problems caused by rising costs of health care and ageing population. Poor and inconsistent quality of care, as well as inaccessibility to timely care, is at the forefront of global issues facing the Healthcare industry today.

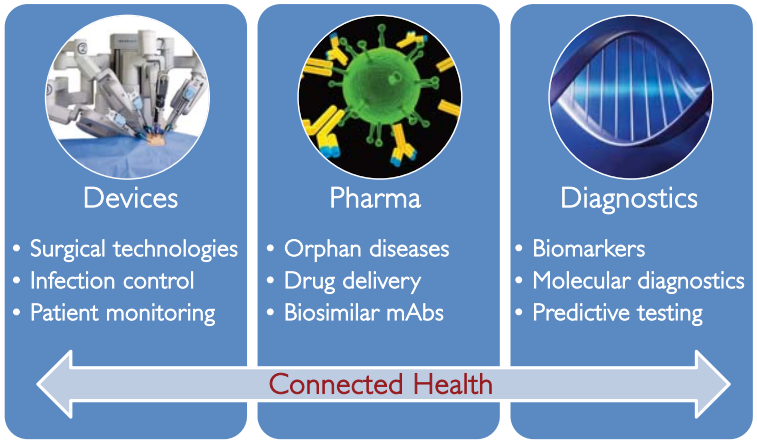
In Healthcare, the question is how we can provide high quality care to every patient globally, in a sustainably affordable way. And furthermore, how can we deploy innovation to solve the growing challenges driven by ever rising costs of care and ageing population?

"In Healthcare, the question is how we can provide high quality care to every patient globally, in a sustainably affordable way."

In our previous Whitepapers (http://www.hitachi.eu/en/sib/whitepapers/), we defined 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." The whitepapers highlight the specific mega trends that are impacting the global energy and transport & mobility sector, the challenges and opportunities for Social Innovation, as well as quantifying the relevant opportunities and their impact.

By starting from the most critical global mega trends (Connectivity & Convergence; New Business Models; Innovating to Zero and Social Trends), we identified the key element of convergence as absolutely critical to the delivery of Social Innovation within Healthcare. The convergence across Healthcare, as well as across sectors such as transport & mobility, has the potential to create exciting opportunities for Social Innovation in the future. For example, future vehicles will begin to incorporate novel health, wellness and wellbeing (HWW) features.

01. Convergence across Healthcare



Source: Frost & Sullivan

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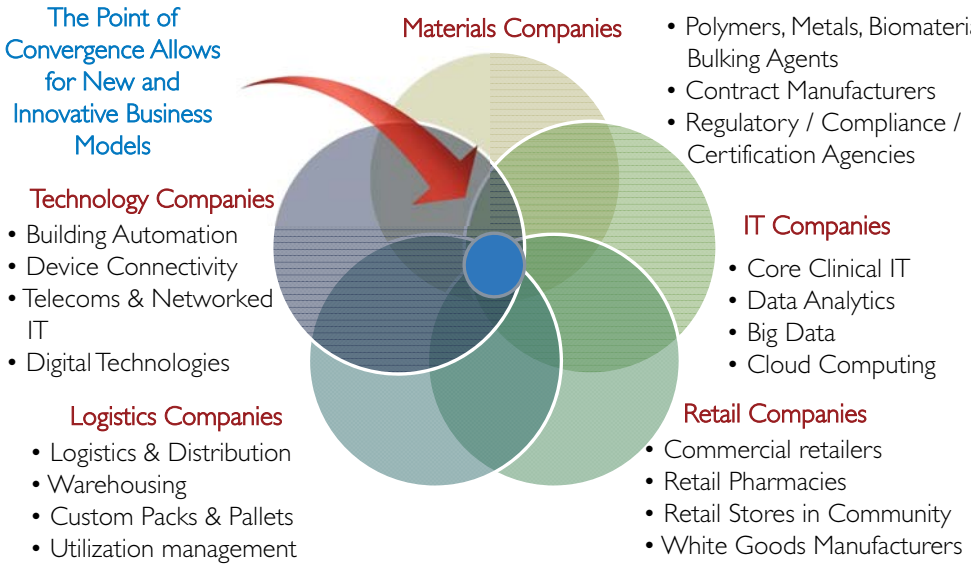
02. CONVERGENCE IN THE HEALTHCARE INDUSTRY TO TRANSFORM CARE DELIVERY MODELS



Source: Frost & Sullivan

Looking closely at the sectors that Frost & Sullivan define as having the greatest need for Social Innovation (Energy, Water, Transportation, Healthcare, Manufacturing, Construction and Natural Resources), we also identified that Social Innovation will represent a market opportunity of $2 trillion by 2020.

In this Whitepaper, we will highlight the specific mega trends impacting the future of Healthcare, and define what Social Innovation can deliver to the Healthcare market. We will take a deep dive into the challenges and opportunities for Social Innovation in Healthcare, as well as quantify the relevant opportunities and their impact from our extensive research in this industry.

We will also introduce Hitachi and its Social Innovation Business and show how the company has become a visionary global player with a thought leading position in the sphere of Social Innovation, as well as sharing some examples of ground-breaking projects being delivered around the world in the crucial areas of chronic disease management and big data, where storage systems and information management solutions are supporting Healthcare institutions. Hitachi's solutions focus on meeting the needs of physicians and patients, improving patient outcomes, reducing the number of patient re-admissions, as well as improving efficiency in health care delivery and cost reduction.

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The Future of Healthcare: The Need for Innovation

The future of Healthcare is being transformed across the globe. In the first decade of this century, the focus has been traditionally on drugs and devices. In the last 5 years, the focus has shifted to integrated services and adding value around the product or device. What has emerged now in 2015 and will continue into 2020 and beyond is the digital experience of the patient. This is crucial as the patient of today is different compared to 15-20 years ago. The patient of today is well informed and often refers to Google as their first point of reference. In addition, patients are increasingly coming to physicians with huge amounts of information and progressively the patient and physicians are researching and also using Google together. The realisation is that there is a different breed of patient, the power patient, and companies have to climb inside the patient's skin to truly understand the interactions they have with products and companies in the Healthcare market. Power patients are interacting with the Healthcare system and with physicians face to face and digitally, thereby starting to manage their own therapy path and wellness far more proactively.

"What has emerged now in 2015 and will continue into 2020 and beyond is the digital experience of the patient."

A combination of new technology and society led innovation is transforming Healthcare products and services, and delivering value for the power patient. This is resulting in enhanced physician-patient relationships and new care delivery models.

03. Focus on the Power Patient and their Digital Experience

Source: Frost & Sullivan

The global Healthcare market faces the dual challenge of ageing population and chronic diseases. There is increasing pressure to provide consistent high quality care and access to timely care in both developed and developing countries globally, as the cost of Healthcare increases. As it stands, 70% of the total expenditure on Healthcare is allocated to managing chronic diseases. The move towards new technologies to manage and self-manage chronic conditions will improve the health status of those patients.

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"The global Healthcare market is undergoing major transformation with exciting developments in personalization, digitisation, wellness and patient engagement."

However, further innovation is required because the number of people aged 65 or older is projected to grow from an estimated 524 million in 2010 to nearly 1.5 billion in 2050, with most of the increase in developing countries. In addition, over the next 50 years the expenditure on health and long-term care (LTC) spending will continue to rise. Total health and LTC expenditure is expected to double as a share of GDP, increasing to almost 14% of GDP among OECD countries in 2060. For the BRICS (Brazil, Russia, India, China and South Africa), starting from a much lower level of around 2.5% of GDP, total public health expenditure will increase to about 10% [Source: OECD]. As a result Healthcare has to change globally as it is massively challenged in 3 areas.

1. Quality of Care – How do we deliver high quality care?
2. Access – to every patient globally – ensuring each has easy access to care?
3. How can we do it in a sustainably affordable way?

04. The Quality Crisis in Healthcare

15% of patients admitted to hospital suffer an adverse event
8% of adverse events result in death; 6% result in permanent disability
10-20% of all adverse events are caused by medication errors
10-15% of hospital admissions occur because providers do not have access to previous care records
20% of lab tests are requested because the results of previous investigations are not accessible

Source: Frost & Sullivan

Issues around quality, access and cost must be solved at a global level to address the great human challenge in Healthcare. Every Healthcare company, every Healthcare system and every society globally is grappling with this issue to some degree. Healthcare companies, medical device companies, life science companies and pharma companies are all starting to focus increasingly at the patient level.

The global Healthcare market is undergoing major transformation with exciting developments in personalization, digitisation, wellness and patient engagement. Companies such as Hitachi are moving towards delivering innovation to their customers and the wider society as a whole, to mitigate global Healthcare challenges, and in turn improve quality of life and the health and safety of individuals. The aim is to 'build a society in which everyone can live in good health, safety and security'. Hitachi's Healthcare IT and Medical Technology support the various needs of the Healthcare care cycle from prevention and checkup, screening and diagnosis, therapy and treatment to prognosis and elderly care.

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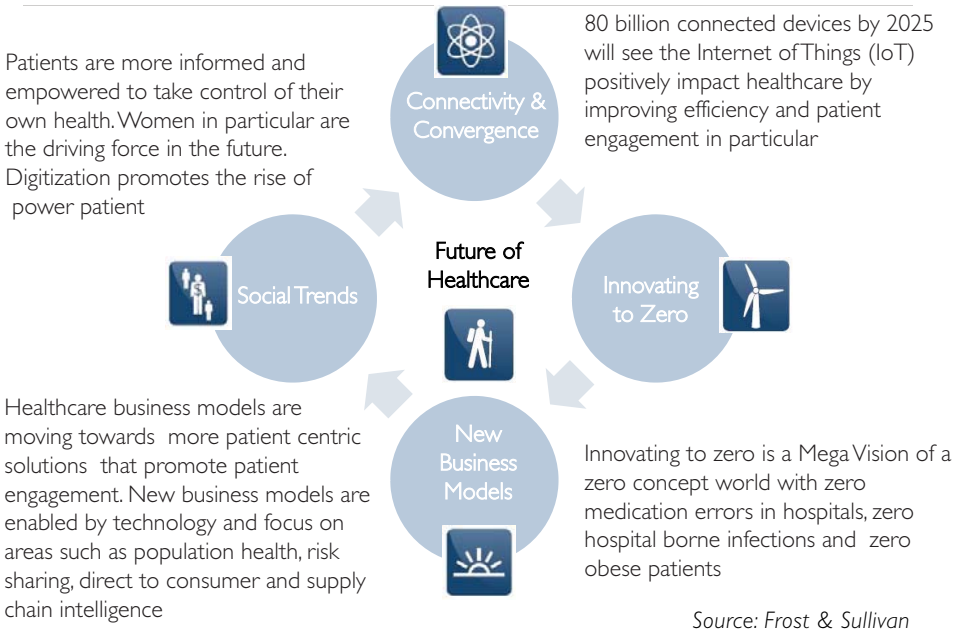
Mega Trends & Future of Healthcare Vision

Introduction & Future of Healthcare Vision

The future of Healthcare is all about connectivity and convergence: This means coordinated and data driven management of populations via digital tools, anywhere and anytime, throughout the continuum of care. As connectivity and convergence come together with health, wellness and wellbeing, we find convergent market opportunities known as connected health. This is extremely important because it paves the pathway to the power patient and helps begin to address the key challenges we face globally.

This vision is being crafted by the convergence of four main mega trends that are continually tracked by Frost & Sullivan research teams: connectivity and convergence to enable valuable data capture and drive innovation and efficiency; new business models to drive patient centric solutions and patient engagement; innovating to zero to create the vision and framework for Social Innovation in Healthcare to flourish; and social trends to drive patient empowerment.

05. Mega Trends Driving Social Innovation in Healthcare



Source: Frost & Sullivan

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Connectivity & Convergence

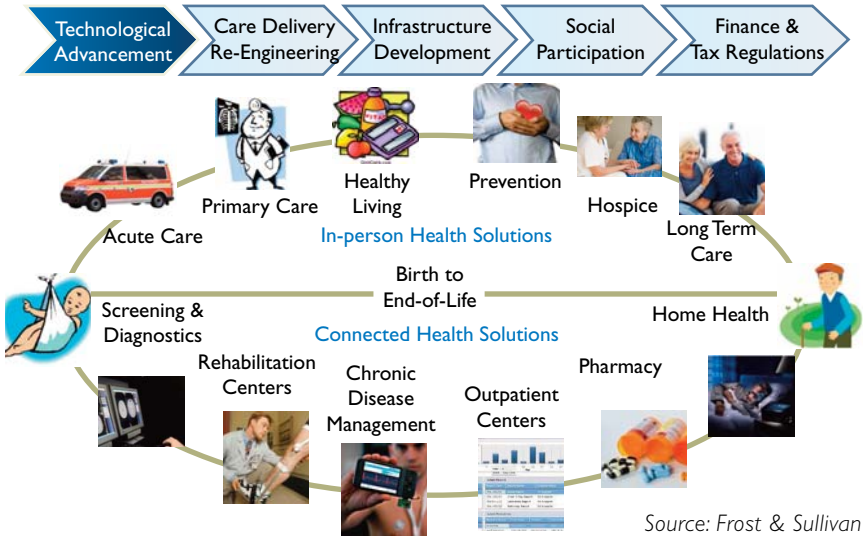
The most impactful mega trend in the Healthcare market is Connectivity & Convergence. The convergence of technologies, products and whole industries, enabled by the connectivity of the world today, is driving business and societal change in many new and exciting ways. Frost & Sullivan believes that there will be 80 billion connected devices by 2020.

In the future there will be more opportunities for connected health solutions around the power patient. Some examples include the use of connected wearable sensors which allow patients to upload information on diverse health parameters for physicians to check. The sensing devices are being integrated with wireless communication technologies for this purpose. Elderly care is one of the most important beneficiaries of connected health, since remote monitoring allows family members to help elderly or disabled loved ones stay in their homes longer. Real-time monitoring enables caregivers to monitor daily routines and be alerted as anything changes.

"Connected health technologies provide platforms supporting the entire continuum of care from birth to end-of-life."

Connected health technologies provide platforms supporting the entire continuum of care from birth to end-of-life. Throughout one's life, opportunities exist to interact with Healthcare, both in person and by using remote/virtual solutions, in different ways and settings, and for various needs. Telehealth services have the ability to drive new ways to experience and collaborate in care across settings, including the hospital, home health, primary care, facility care, and the retail pharmacy clinic. It can impact a wide spectrum of focused uses, from treatment to prevention between consumers and healthcare professionals.

06. Technologies Focus on Supporting the Entire Continuum of Care from Birth to End-of-life



Source: Frost & Sullivan

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In the future, technology is being geared towards integrated platforms, coordinated care and location agnostic solutions. The key aim of these solutions is to prevent, avert, or mitigate a condition or negative health outcome through decision support tools, workflow optimization, information management and patient interaction. Connected health allows Healthcare professionals, institutions and patients to easily access critical information.The NHS budget includes £1 Billion for connected health, which will go towards the challenge of integrating patient records across health and social care by 2020. Shared records and clinical information systems will be the drivers to re-shaping services around the needs of the patient. There is huge potential as more than 50% of Healthcare providers do not have a Healthcare IT roadmap, though they recognise the importance of digital health in increasing Healthcare efficiency.

"The business model transformations impacting the Healthcare industry are the perceivable shift in target customers from payors and providers to patients and consumers."

New Business Models

The rise of IT, connectivity and mobility has enabled tremendous shifts in the modernisation of Healthcare. As a result, major themes are emerging in the new Healthcare economy because of these changes. Healthcare trends necessitating business model innovation include an industry-wide shift in focus from acute care to prevention and wellness, a growing emphasis on predictive, preventive and personalised health and Healthcare delivery, a systematic shift in the point-of-care delivery, as well as the increasing influence and importance of data and the emergence of data-oriented products and services in Healthcare.

The business model transformations impacting the Healthcare industry are the perceivable shift in target customers from payors and providers to patients and consumers. Although business-to-business (B2B) models continue to have a stronghold on the industry, business-to-consumer (B2C) models are emerging. B2B models are also shifting from a product-oriented value proposition to a service-oriented one and there is growing influence of eCommerce, mCommerce and social media in Healthcare. For example, companies such as Amazon and Alibaba are creating Healthcare specific models. Alibaba operates leading online and mobile marketplaces in retail and wholesale trade, as well as cloud computing and other services. It has the fastest growing eCommerce in Healthcare and offers a low-cost alternative to traditional supplies and devices.

Customers are demanding optimisation of outcomes and costs, and expectations are altering dramatically as decentralisation and virtualisation of delivery of care is able to facilitate customised care to best suit the individual and their family and enable anytime and anywhere access, with information transmitted and shared in real time between individuals and caregivers.

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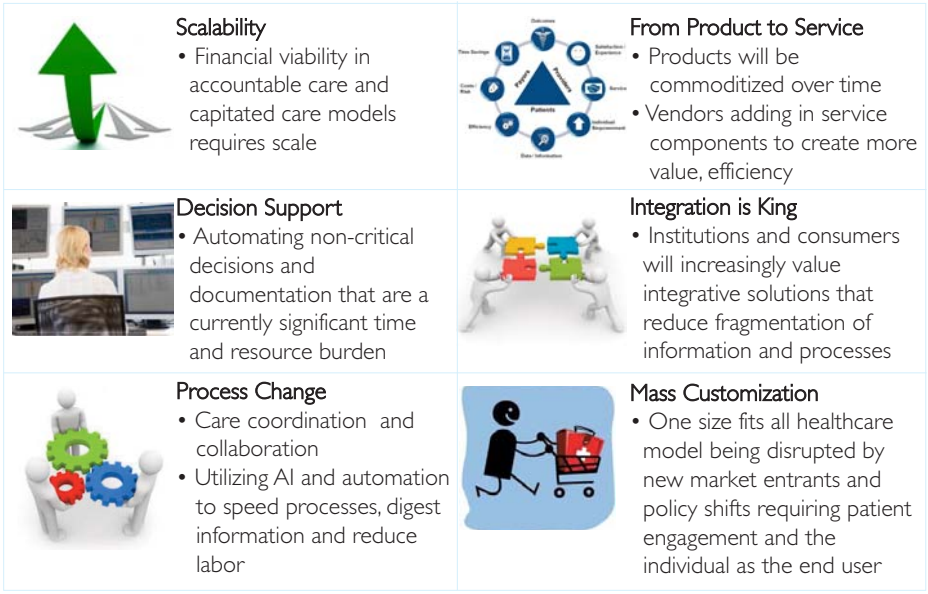
As stakeholder roles and expectations change, there is creation of both opportunities and challenges in customer and partner interactions. The one-size-fits-all approach that has dominated the Healthcare industry is slowly giving way to the consideration of more unique customer segments where each type of consumer is differentiated by expectations, needs and means to participate in the Healthcare system. Depending on the individual, there is potential for platforms and solutions that are tailored to segmented needs, and specialised user groups offer opportunities to personalise and differentiate services.

Many needs mean many models, but the 6 big themes that will drive new business models in Healthcare are scalability, decision support, process change, customisation, integration and services to enhance product delivery.

"The Healthcare value proposition must move beyond products and services to social benefits that enable people and companies to create better societies."

07. Themes Driving New Business Models in HC



Source: Frost & Sullivan

Customer-to-customer (C2C) will be the next stage of business model evolution in Healthcare and companies will need a robust data-strategy that can inform all aspects of its business. Sites such as 'PatientsLikeMe', encourage patients to share both personal stories and health data about their condition. People can find information about their illness and available treatments, while also connecting with other patients with the same conditions. The Healthcare value proposition must move beyond products and services to social benefits that enable people and companies to create better societies.

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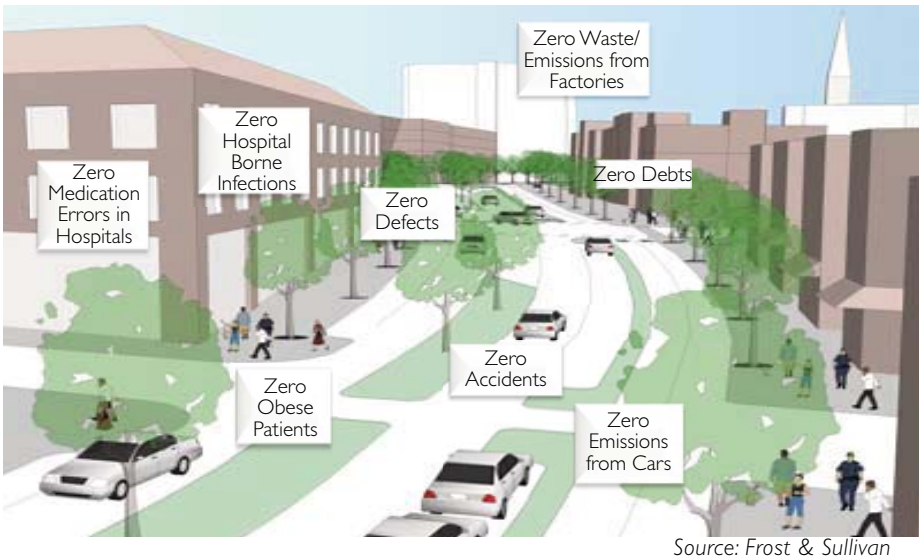
Innovating to Zero

Innovating to Zero is not a mega trend, but a mega vision that starts with a zero goal that is good for humanity. The idea of error-free Healthcare creates the concept of innovating to zero. This is a key platform that will enable future Social Innovation, as it has the potential to zero out issues that are inflicting patients globally and help solve them. Errors resulting from misdiagnosis, procedural errors, and errors in medication administration can be avoidable with IT and sensor based tools that provide guidance and support.

08. Innovating To ZERO: Snapshot of a "Zero Concept" World in 2025
Innovating to Zero Goals in Healthcare and Pharma by 2025



Source: Frost & Sullivan

The most innovative companies in Healthcare are those looking to improve quality of treatment while simultaneously collapsing extraneous tasks and costs tied to legacy processes. There is strong evidence to suggest that companies will shift their focus and develop products and technologies that "Innovate to Zero". Examples at a city level include Mayor Bloomberg's initiative in New York, a couple of years ago which envisioned 'zero fizzy drinks'. The implication on society as a result of fizzy drinks is the high sugar content, which as a consequence drives obesity and other health related issues such as diabetes.

Adopting zero goals and innovating to those zero goals is a path forward to transform Healthcare and address access, quality and cost issues that plague us today. The near-zero vision can be realised if technology is employed. Examples include using Health informatics which consists of knowledge, skills and tools that enable information to be collected, managed, used and shared to support the delivery of Healthcare and promote health.

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In addition, predictive data analysis is a method of extracting useful information from huge data sets to identify significant patterns and predict futuristic trends and outcomes. Predictive data analytics leverages data mining, statistical modelling and machine learning techniques to analyse data and make probabilistic predictions. The 'quantified self' movement aims to measure all aspects of our daily lives with the help of technology. Wearable devices such as activity trackers, along with apps that let us log our every step, provide us with a better understanding of ourselves and our nature, and may even benefit our health.

Social Trends

Social trends in Generation-Y (the generation born in the 1980s and 1990s), rise of the middle class, an aging population and women's empowerment will usher in deep socioeconomic changes in our future society. The creation of a "Healthcare elite" as a result of rising middle class means those that can, will spend money out of pocket for elective procedures, executive and personalized levels of care.

09. Social Trends: The Middle Bulge

Over 1.5 billion middle class consumers from India and China alone by 2020

Income (Annual)	Russia[2]	Brazil[2]	China[1]	India[1]	Turkey[2]	South Africa[1]
Above $100,000	8	6	2	5	2	2
$60,000-$100,000	12	13	6	10	3	2
$44,000-$60,000	12	20	21	45	10	3
$22,000-$44,000	22	56	123	95	21	1
$15,000-$22,000	16	32	313	81	12	7
$10,000-$15,000	18	52	287	108	10	8
$7,500-$10,000	30	20	205	80	8	12
$3,200-$7,500	13	4	350	500	12	5
$1,000-$3,200	12	6	60	85	7	4
Below $1,000	2	2	21	390	0	9
Total Middle Class	55	140	949	864	61	19
Total Population	141	210	1,388	1,399	85	53

Note: Numbers in Millions
[1]Income Brackets in Total Household Income Terms
[2]Income Brackets in Per Capita / Individual Income Terms

Middle Class Individuals Below Poverty Line

Source: Frost & Sullivan

Approximately 80-85% of women make Healthcare appointments and are key decision makers for their family members. They typically use online tools more frequently compared to men, are gaining more powerful positions in the work place and represent a source of unexploited wealth. Women will become a driving force in the future as their influence moves beyond the family. In addition, as their expectations and demands are increasing we see the rise of the "Sheconomy."

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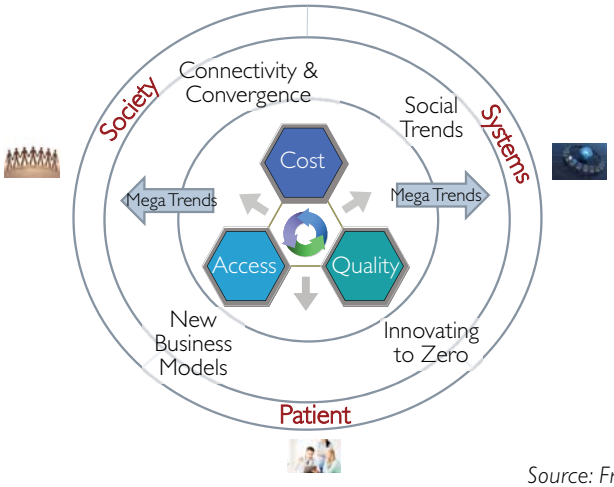
Defining Social Innovation in Healthcare

The converging mega trends outlined below are creating Social Innovation opportunities that target the underlying problems with our Healthcare system today and aim to reduce costs and improve quality and access to care.

10. Social Innovation in Healthcare



Source: Frost & Sullivan

"Social Innovation opportunities exist at a society level, system level, down to the individual patient level."

The most notable conclusion of our research here is that Social Innovation opportunities exist at a society level, system level, down to the individual patient level. From the society perspective, Social Innovation can positively impact governments, policy makers, insurers / payors, providers, clinicians, down to the individual patient level. In addition, technology and innovation are enabling new systems, care delivery settings and business models to emerge. In addition, the rise of the power patient means they are more involved and take ownership of their health and care.

We will therefore look in more detail at the needs and opportunities for Social Innovation from the society, system and patient's perspective in the sections below.

The need for Intervention and Social Innovation

Among the areas most likely to benefit the most from Social Innovation in Healthcare are:

- Developing communities where access to care and quality can be im proved at the society level
- Hospitals and other Healthcare institutions where patient outcomes and re-admissions can be improved to reduce costs and increase efficiency gains at the systems level
- At the patient level where connected solutions can be used to proactively manage one's own health more efficiently.

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All of these areas looked at individually will deliver incremental benefits to their respective cities, communities, companies and countries, but if considered cumulatively, there is an extrapolated opportunity to realise through enabling Social Innovation in Healthcare.

Social Innovation in Action - Today

There are several areas where we already see Social Innovation improving Healthcare, across various modes and of differing scales. The union between society, systems and the patient is, and has, the potential to both enable and promote Social Innovation in Healthcare. Innovation across the care cycle from prevention, early detection of diseases, screening and diagnosis of diseases, therapy and treatment, to prognosis and care of the elderly has the potential to positively impact societies, systems as well as individual patients.

Society

Social Innovation has the potential to create value and lower healthcare costs and is becoming increasingly important across the entire industry for physicians, governments, hospitals, and patients. The Healthcare industry historically has operated in distinct silos, but is now being forced to integrate, thus creating new types of partnerships and collaborations.

Developing economies in the future are expected to face increasing pressure and undergo rapid changes. As a result, many developing countries and Healthcare systems have implemented wellness and prevention programmes and have increased collaboration efforts with community partners. In addition, there has been a shift towards patient health outcome models that are linked to new payment models. The spiralling cost of care to government and private payors is forcing the launch of new methods and models for payment of Healthcare services and products. Once mired in bureaucracy and paperwork, the digital revolution in Healthcare is providing payors with a wealth of patient and health data that can be leveraged to optimize business models and health management.

Using data and analytics to support these changes within the Healthcare system can enable healthcare providers to better monitor patients, improve operational procedures and more accurately track treatment and treatment costs against outcomes. The various stakeholders that can benefit are patients, as well as healthcare institutions that can improve patient care and reduce hospital re-admissions and the length of hospital stays.

"The Healthcare industry historically has operated in distinct silos, but is now being forced to integrate, thus creating new types of partnerships and collaborations."

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The Social Innovation in Health Initiative is a great example of innovation in action. It is made up of an international collaboration between the Bertha Centre for Social Innovation and Entrepreneurship at the University of Cape Town, the Skoll Centre for Social Entrepreneurship at Oxford University and TDR (the Special Programme for Research and Training in Tropical Diseases), which is hosted at the World Health Organization in Geneva. Examples of innovation include:

- Drug Shop Integrated Care in Uganda: Integrated management of fever, malaria, pneumonia, and diarrhoea in children at drug shops
- GP Down-Referral Model in South Africa focusing on HIV: Public-private partnership to address the demand-supply mismatch in the provision of public health care
- Mobile-based Surveillance Quest using IT (MoSQuIT) in India: Disease surveillance system for malaria using a mobile platform

The MoSQuIT system facilitates various steps of malaria surveillance: data-collection, data transfer to a centralised system, and data analytics. MoSQuIT improves the management of clinical information and facilitates timely action by the public health system. The MoSQuIT software has been deployed in collaboration with Regional Medical Research Centre (RMRC)/Indian Council of Medical Research, (ICMR) at Dibrugarh district of Assam, in the Tengakhat Primary Healthcare Centre (PHC). About 50 villages have been identified in the PHC, where 50 ASHA (Accredited Social Health Activist) workers are equipped with a mobile phone for data collection, reaching out to a total population of 50,000 villagers. Based on the success of this work, further scaled-up deployment of MoSQuIT has been approved along international borders in North East India. [Source: Social Innovation in Health Initiative]

"In developing economies, over 70% of Healthcare funds are spent on people with chronic conditions."

In developing economies, over 70% of Healthcare funds are spent on people with chronic conditions. These conditions are leading causes of death and disability and are impacting patient's quality of life. Approximately 1% of patients use a third of health resources in developed countries and the majority of these patients are elderly. Conditions such as Heart disease and type 2 diabetes can be addressed by focusing on prevention, where there is increasing use of data and analytics to identify who are this high risk group, so Healthcare systems can intervene at an earlier stage. Ultimately, this can reform models of care to ensure more efficient and effective treatments are delivered.

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The Centers for Disease Control and Prevention (CDC) -led National Diabetes Prevention Program is an evidence-based lifestyle change program for preventing type 2 diabetes in the US. The year-long program helps participants make real lifestyle changes such as eating healthier, including physical activity into their daily lives, and improving problem-solving and coping skills. Participants meet with a trained lifestyle coach and a small group of people who are making lifestyle changes to prevent diabetes. Sessions are weekly for 6 months and then monthly for 6 months. The aim of this program is to help people with prediabetes and/or at risk for type 2 diabetes make achievable and realistic lifestyle changes and cut their risk of developing type 2 diabetes by 58%. In addition, more organisations are coming on board to meet the growing demand for effective programs to help adults prevent or delay type 2 diabetes. The National Diabetes Prevention Program encourages collaboration among federal agencies, community-based organizations, employers, insurers, health care professionals, academia, and other stakeholders to prevent or delay the onset of type 2 diabetes among people with prediabetes in the United States. Recent statistics indicate that the number of new cases of diabetes in the United States has started to decline; figures show 1.4 million new cases in 2014, compared to 1.7 million in 2009. [Source: CDC]

"With the growing population and increasing digitisation of healthcare documents, data is increasing at an exponential rate."

Systems

In today's Healthcare industry, a variety of voluminous data is generated from several sources, such as pharmacies, electronic health records/medical records, patient services, and payors. These information sources are often not connected to each other. The key reason is Healthcare institutions and professionals often work in isolated silos of practice. With the growing population and increasing digitisation of healthcare documents, data is increasing at an exponential rate. Due to limited analytics, much of this information rich data lies latent and is not explored to the fullest. In addition, lack of integration can mean that patient outcomes are poor and patients have a negative experience.

In addition, a significant portion of data generated by enterprises consists of unstructured data which is difficult to query and utilize. Moreover, as companies increasingly rely on non-traditional sources and formats to gather information, and as the number and types of data grow, the proportion of unstructured to structured data is expected to increase. Big Data management tools present an opportunity to combine structured and unstructured data into a single, powerful database.

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The amount of data generated through the Internet of Things (IoT), social, and mobile channels reached a tipping point in the last couple years and is proliferating every passing minute. Though the market has had storage, information management, and business intelligence (BI) solutions, it has only recently begun to bring all of these disparate pieces together to realize the Big Data opportunity. Integrating these traditional siloes has been possible with the introduction of Hadoop and a handful of other infrastructure and database solutions. Ultimately, this has also triggered the growth of and demand for Big Data analytics solutions.

Why is Big Data so significant? There is a need to create choice-based healthcare systems. Healthcare as of now follows a single direction flow approach where patients can only follow the healthcare system directives. Actively involving the patient based on data is expected to improve the healthcare system as well as the payment associated with it. Specific data collected for big data analysis may include patient choices, sensor data and gene data. The use of Big Data on patient health care choices and various data collected through sensors on their day-to-day activities is expected to create an efficient healthcare management system. This is expected to help in much better disease management in the future if applied to huge amounts of gene coding data.

However, Healthcare companies face challenges with regards to data warehousing, implementing analytics, using business intelligence tools effectively, and sharing data. Further support is required to increase industry readiness, storing data in a more structured manner and merging data which is often fragmented across institutions and different networks.

Social Innovation is happening around people and processes and further integration is occurring as we move to more patient centred care, particularly for chronic disease. The use of big data and analytics can support healthcare providers to integrate patient data more securely across different systems. This helps to give a better indication of the situation and also has the potential to improve health and cut costs by enabling access to real-time patient and institutional information, integrating data across the continuum of care, and providing new insights into treatments and outcomes.

Clinicians, data analysts, corporate heads, and others are exploring how to extract meaningful information out of data to deliver higher quality, more coordinated care. Laboratories, on the other hand, are more interested in diagnostic tests that can be integrated with the overall hospital system to harness data and monitor individual patients.

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The University of Michigan (U-M) Center for Integrative Research in Critical Care is working with IT vendors to develop a clinical decision support tool that analyses various streams of data about the patient such as sex, blood pressure, Electro Cardiogram (ECG), and so on. Partnerships with mobile technology companies and analytics firms are harnessing big data to develop a smart device-based system. It allows physicians to monitor patients with chronic diseases at home in real time and with the integration of wearable technology and cloud computing. There are plans to consolidate all data to analyse larger high-risk populations. The tool can also be used as a predictive application utilizing the vast best practices data pool. The results are data-driven diagnosis and treatment, which will be vital in moving to a value-based system for both physicians and patients.

"The future focus within Healthcare will be on the power patient and this is where positive disruption and change is happening in the industry."

Patients

The future focus within Healthcare will be on the power patient and this is where positive disruption and change is happening in the industry. In many instances, patients are more informed compared to their Healthcare physician, therefore companies operating in the Healthcare space need to reconsider how customers are thinking, as patients are no longer going to be passive participants in the decision making process. Patients who have traditionally followed the course of care recommended to them by clinicians, will now be required to take a more proactive role in identifying what types of services they need and what they will pay for.

Social networking platforms are playing a key role in patient information and there is an opportunity to drive patient engagement by linking health behaviour to a social activity. Social activities for patient engagement encompass social media, online platforms & panels for patients, care-givers & Healthcare professionals, gaming, competitive data sharing and live discussions. The benefits of patient engagement have been notably associated with higher rates of adoption and adherence particularly in medication management and remote patient monitoring. This creates avenues for capturing unstructured patient data and allows better insight into the consumers' health. Wearable health monitoring systems represent the next wave of diagnostic technology that enables non-invasive, efficient and effective monitoring of human physiology.

Therefore technology and analytics has the potential to enable healthcare providers to identify effectively patients that are at risk and also promote wellness by letting patients access their own health analytics. In addition, patients can take a more active role in their own health.

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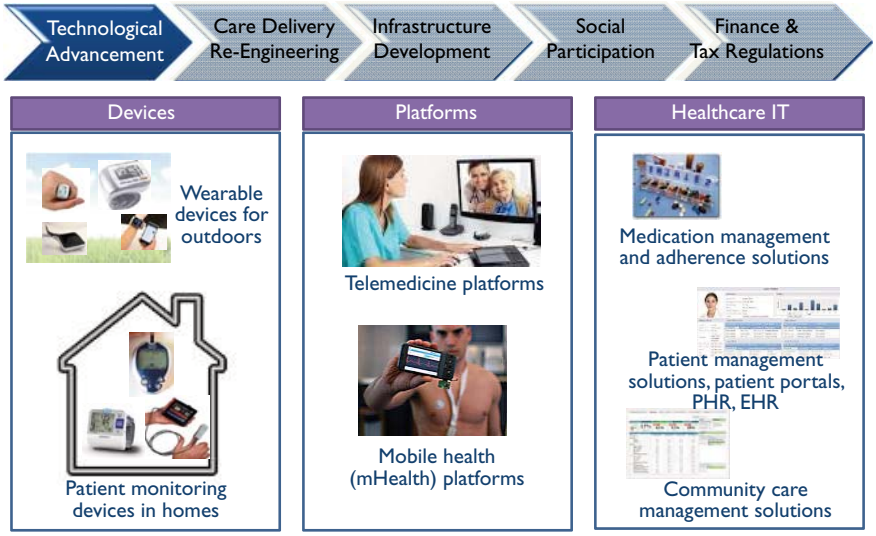
This also encourages the move towards early prevention, particularly because 80% of an adult's health is determined by lifestyle choices. Social Innovation in prevention is an area of huge potential for Healthcare companies as it helps tackle the key challenge of lifestyle related diseases which most significantly drive the costs of the Healthcare system.

Innovation targeted around the power patient, particularly in elderly care to promote independence and the social experience, is a key area of interest. Technologies such as wearable devices, sensors and other patient monitoring devices, and even senior-focused social networks, can help elderly people to continue to live at home. For example, sensors can be placed around the home as well as in appliances and on the patient, enabling a patient with Alzheimer's to live in the comfort of their own home as caregivers are able to track and monitor their movements through sensors and smartphone apps. They are then alerted if meals are missed, if they do not get out of bed, if they fall, or if there are any other signs of risky behaviour.

"In the future, the use of technology will continue to change the way we deliver health care."

11. Home Care Technologies To Support Aged Care Have Seen An Exponential Increase in Demand



Source: Frost & Sullivan

Social Innovation in the Future

As many of the above business models become more fully established and deployed on a mass scale, Social Innovation provides the opportunity to connect several of the initiatives to improve society and quality of life at a greater rate. In the future, the use of technology will continue to change the way we deliver health care. Patients are consumer-driven, living in a one-click service environment and technological change is shaping their expectations about health.

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In addition, the traditional patient/doctor relationship is becoming blurred and patients are making more informed decisions about their therapies. Patients expect to access information about their health easily and mobile health apps are becoming a regular part of care. New participants and new partnerships will continue to drive the future Healthcare economy.

12. Six Big Themes for the New Healthcare Economy

Modernizing Care Delivery – Clinical practice is moving from intuition based decisions to more analytics and data based approaches.

Role of New Participants – The emergence of IT based tools and services is witnessing the rise of a new breed of competitors.

Rethinking the Customer – Patients are no longer going to be passive participants in the process.

Who Pays? -The spiraling costs of care to government and private payors is forcing the launch of new methods and models for payment of healthcare services and products.

Companies Revamping Strategies – Many industry participants as currently structured can not maintain viability without significant changes to their business model.

New Partnerships – An industry that historically operated in distinct silos is now being forced to integrate, and thus leading to firms seeking new types of partnerships and collaborations.

Source: Frost & Sullivan

"An incredible $985 billion is at stake annually by 2020."

In the section below we have looked in more detail at the specific areas where Social Innovation in Healthcare will make a significant impact on our future and identified the key indicators that can be quantified to define that impact.

Quantifying the Opportunity

In considering the monetary and societal benefit that can be derived from Social Innovation Business in Healthcare, Frost & Sullivan believe there is a $985 Billion value at stake. Five main areas have been considered to quantify the opportunity: the value of big data; the value of next generation wearables and Healthcare-centric apps; the value of the Global med tech industry; the value of the telehealth market; and the value of Global Healthcare spend on prevention. These key drivers are the building blocks of our Social Innovation predictions for 2020.

Social Innovation is hugely impactful, both in the quantifiable terms above, but also in driving the following benefits that are less easy to quantify: people living longer, improving quality of life, and increasing access to care in the developing world.

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Hitachi Live Example:

"Hub-and-Spoke hospital care - Avare, Brazil"

Despite all the services offered, the Santa Casa of Avaré did not have an Image Diagnosis Unit (IDU). As the population of the city and its neighbouring towns grew, the demand for such exams has increased.
The hospital was intended to supply the healthcare shortage not only for the inhabitants of Avaré but also the populations of its 16 neighbouring districts.

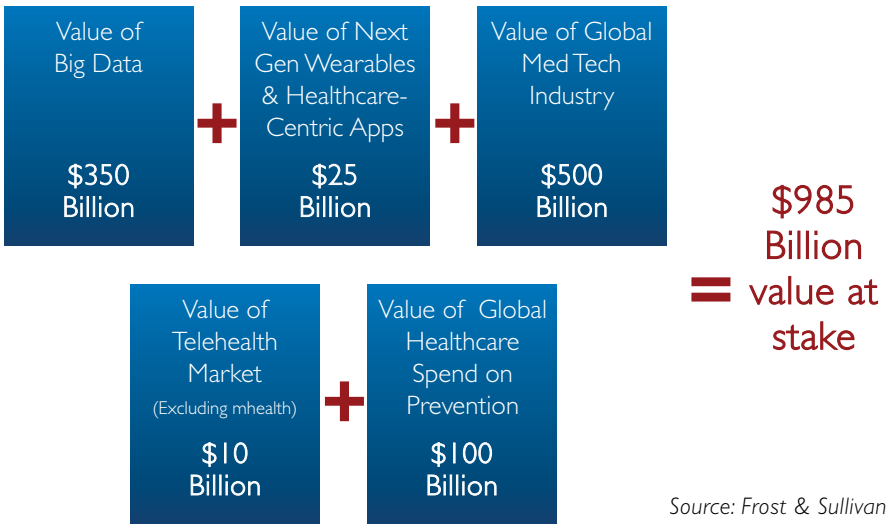
By partnering with Hitachi to create an IDU solution, the hospital is preventing many patients having to travel up to 120km to take magnetic resonance exams elsewhere. The result has exceeded the expectation of 66 exams per month, and the hospital delivered 200 exams in only 2 months. The critical element to the project's success was the fit of the IDU technology as it was agile as well as easy to use and install. Despite being a low magnetic field device, AIRIS II had high amplitude gradients, enabling it to perform exams within 30 to 40 minutes. This offered a huge advantage to the hospital and enabled more patients to be seen overall.

AIRIS II is easy-to-handle, adding to the operator's agility and a rapid exam completion. The space required for its installation was no larger than 30m² and it did not require a cooling room once its magnet is permanent allowing for a significantly reduced maintenance cost.

Customer Benefit:

Santa Casa can now continue to offer critical health services to its growing urban population at a reduced cost.

13. Social Innovation in Healthcare – The Value at Stake



Source: Frost & Sullivan

When considering opportunities for Social Innovation in Healthcare, there will be a degree of overlap between each of the areas we have considered in our analysis. For example, the use of big data and increasing use of wearables will contribute to solutions in the preventative space.

Value of Big Data

Big data analytics has the potential to shift the focus from treatment to prevention, as well as reduce hospital re-admission rates. The Healthcare sector is set to generate between $350-400 billion worth of valuable data, from clinical trial studies to simple lab-test results in 2020. The data is extremely fragmented across facilities and regions. Bringing all this data together will lead to great insight into diseases and enable not just precision medicine but an in-depth population analysis.

Big data technologies and analysis of genetic information from large patient groups will be used to discover mutations and markers to provide valuable insight for drug development. This is vital for cancer diagnosis and treatment, as this emerging technology will help early detection and will save millions of lives.

By applying data mining tools to data sets from a large number of patients, medical researchers are pin-pointing causes of diseases and options for prevention, diagnosis and treatment. This will not only prove to be incredibility cost effective in the future but will revolutionise the method of diagnosing a disease.

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Hitachi Live Example: "Particle Beam Therapy"

Key examples of implementation include:

- **St. Jude Children's Research Hospital opening the St. Jude Red Frog Events Proton Therapy Center in Memphis, Tennessee, the world's first proton therapy center solely dedicated to children.** The aim is to provide therapies that maximize cures whilst minimizing long-term treatment complications.
- **The FDA 510(k) clearance for the commercial supply of the new PROBEAT-V is a particle beam therapy system, which it designed and developed for Mayo Clinic in Rochester, MN.** PROBEAT-V is a particle beam therapy system used to deliver Hitachi's Discrete Spot Scanning capability to each treatment room and is designed to deliver highly precise treatments.
- **The manufacture and sales of PROBEAT-RT, a particle beam therapy treatment system, combining spot scanning irradiation and Real-time Tumor-tracking Radiation Therapy in Japan.** The aim of the treatment system is to support the reduction of the irradiation of normal tissue, in a compact and low-cost system. The Real-time Tumor-tracking Radiation Therapy has been developed by Hokkaido University through X-ray therapy with Hitachi's Spot Scanning proton beam irradiation technology, which was delivered for the first time ever to a general hospital.

Customer Benefit:

Particle Beam Therapy improves the quality of life for cancer patients since the patient experiences no pain during treatment and the procedure has very few side effects compared with that of traditional radiotherapy.

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Value of Next Gen Wearables & Healthcare-centric Apps

Frost & Sullivan estimates that next gen wearables and Healthcare-centric Apps have the potential to reach $25 billion globally by 2020. There has been a 30% year-over-year increase in the number of healthcare-centric apps launched for smart devices; a much higher percentage of apps will include clinical grade functions and support in the future. The rise in the wearables market will be further fuelled by innovative companies focused on complex Health & Wellness needs. Between now and 2020 we will see early stage companies launching wearables that are equipped with more sophisticated sensing, capture, and analytical functionalities, making the clinical utility of those devices more actionable and relevant than previous devices.

Value of Global Med Tech Industry

Frost & Sullivan predicts that the global med tech industry will reach $500 billion by 2020. The key success drivers are technologies geared towards integrated platforms, coordinated care and are location agnostic. The types of companies that will excel are those that prevent, avert, and mitigate a condition or negative health outcome. Therefore the key focus will be on decision support tools, workflow optimisation, information management and patient interaction.

Value of Telehealth Market

By the end of 2015, nearly 6 million homes globally will have some form of telehealth set-up in place. The telehealth market is growing and is expected to show a steady increase depending on the establishment of infrastructure, reimbursement guidelines, and commercialisation of pilot projects. The global telehealth market is expected to reach $10 billion by 2020 and includes remote patient monitoring and telecare services. Our definition here excludes mobile health (m-health).

An ageing population and need for chronic disease management has given impetus to telehealth adoption. Initiatives by the government and regional healthcare authorities to convert major pilot projects to large-scale commercial deployments will contribute to the adoption of telehealth solutions. However, the lack of proper reimbursement policies, non-scalable business models, and underdeveloped interoperability standards are key hurdles that must be overcome.

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Hitachi Live Example: "Klinikum Wels-Grieskirchen"

With 1,227 beds, the Klinikum Wels- Grieskirchen is Austria's 5th-largest hospital and one of the largest religion-based hospitals in Europe. The hospital employs around 3,500 members of staff across 36 wards and 27 departments and institutes on 3 different sites. Each year, the hospital treats more than 78,600 patients and performs over 31,000 operations. This work generates large volumes of clinical and administrative data on a daily basis.

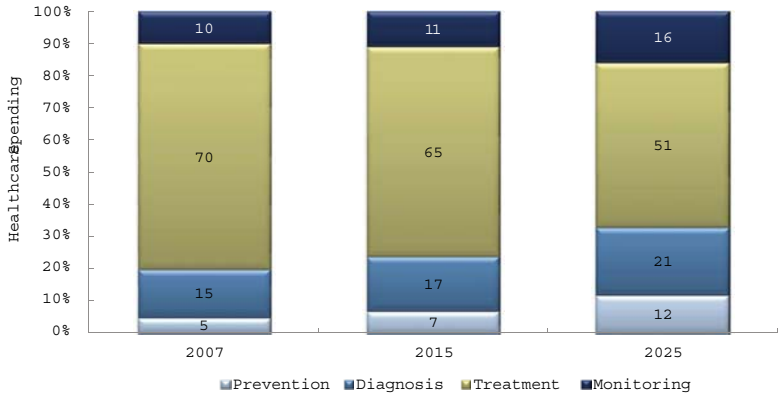
IT solutions are required to enable organizations to better manage their information, optimize clinical workflows, cut waiting times and reduce compliance risks. The main priorities for Klinikum Wels-Grieskirchen include clinical efficiency, exchange of health-related information and improving quality of care.

In the last five to seven years, medical device manufacturers, pharmaceutical companies, mobile network operators, and telecom vendors have entered the market—pointing to a convergence trend between the healthcare and information technology sectors.

Value of Global Healthcare Spend on Prevention

Healthcare spending is steadily increasing in the prevention space. In the next decade, this trend will continue to grow and there will be an increased focus on chronic disease management. Frost & Sullivan predicts that the value of Global Healthcare spend on prevention will reach $100 billion by 2020.

14. Healthcare Spending by Segment



Source: Frost & Sullivan

Hitachi's Unique Contribution

Social Innovation in Healthcare at Hitachi

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. Hitachi is unique in its approach in Social Innovation around the world and focuses on capturing this at three levels; the society level, the system level, all the way down to the patient level. The vision is to 'build a society in which everyone can live in good health, safety and security'. Hitachi aims to create an efficient and improved quality of Healthcare by focusing its medical innovation around patients, medical care providers, insurers and government and municipalities.

Hitachi's Business Vision for Healthcare

Hitachi's Healthcare activities bring together various critical elements: Healthcare IT; Medical devices for each disease type; Solution services for Hospitals; and R&D for the future in order to address current and future global Healthcare challenges. The key focus areas being addressed include

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Using the virtualization technologies provided by Hitachi Data Systems, the Austrian hospital successfully established a private cloud that is unique across Europe. The hospital's data is stored in a multitier storage solution based on Hitachi Unified Storage VM (HUS VM). Key benefits include Integrated repositories; Search across all systems; Secure access to treatment–related data and High performance, scalability and cost efficiency.

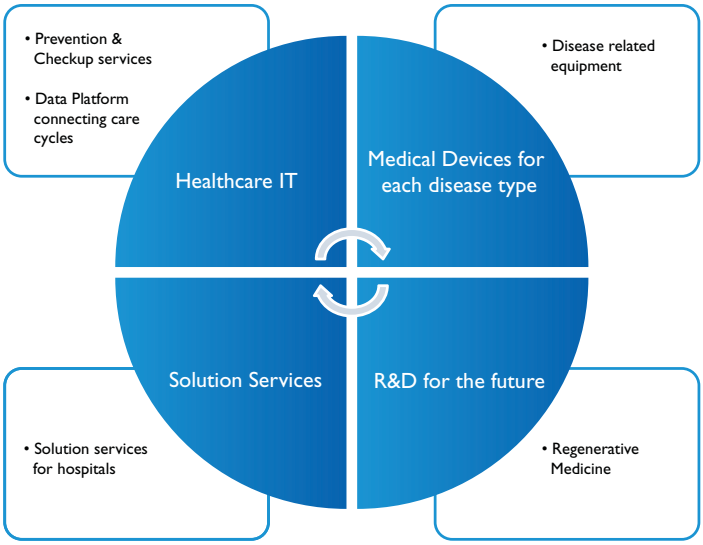
Users are able to access the right information at the right time, in the right place and in the right format. In addition, the ability to search for data across all their systems, regardless of manufacturer or location, is the key benefit. Hitachi Clinical Repository gives flexibility to integrate any type of clinical system into a comprehensive archive.

Customer Benefit:

The system gives users access to data for all clinical and administrative requirements, enabling them to improve patient care.

medical expenditure optimisation, and advanced medical and hospital management improvement in order to promote better patient outcomes regionally and globally.

15. Hitachi's Healthcare Business Vision
Supporting various needs of care cycles by Healthcare IT & Medical Technology



Source: Frost & Sullivan

Hitachi's focus on Healthcare IT is to create new services based on analytics, in order to provide diagnostic support for personalised care. A great example is the collaboration between Hitachi and British NHS Greater Manchester, where proof of concept level testing has begun for developing guidance in preventing diabetes. Hitachi also offers support for local comprehensive care of the elderly with its cloud solutions for municipalities' care stations and hospitals, where care rating data can be securely shared. Hitachi is also further strengthening its data platform with Hitachi Clinical Repository (HCR) Healthcare data cloud services. The management of genomic information is centralised in order to support treatment needs. Within Healthcare IT, Hitachi also continues to utilise analytical tools to further support the global development of Big Data analytics.

Hitachi's vision in disease related equipment is to enhance diagnosis related functionality. Screening and diagnosis equipment covers ultrasound, MRI, X-ray CT, X-ray, bone densitometer and optical topography. MRI guided interventions are used in cancer for example, for surgery visualisation for brain tumor spots on MRI images. This means surgery can be performed whilst confirming brain tumors on MRI images. Key benefits include high extractability and improved 5 year-survival rate.

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On the therapy side equipment includes particle beam systems, X-ray systems and cryoblation treatment systems. A great example within Oncology is Hitachi's collaboration with Hokkaido University, where Motion tracking technology of Hokkaido University and Hitachi's spot scanning irradiation technology provide the first combination irradiating in the world, allowing tumors to be moved precisely. In the US, Hitachi is also working with hospitals to support cancer treatment plans with analytics. Particle beam therapy customers provide case data that can be analysed by Hitachi's analytics IT platform. The overall aim of all of these initiatives is to develop intelligent operating rooms within specific therapy areas and create solutions that support the care cycle.

Solution services for hospitals aim to improve regional medical care quality by connecting core hospitals and clinics through care cycles. For example, Hitachi's solution for Kurume University Hospital in Japan focuses on services that support medical relationships, diagnosis and Positron Emission Tomography (PET), as well as engineering, operation and finance support. Kurume University Hospital's expected outcomes include strengthening local partnerships & increasing the number of new patients, optimising average hospitalisation to improve bed occupancy ratio and optimising the imaging centre. Hitachi's aim is to provide solution services that optimise hospital and overall care cycles through advanced IT solutions.

On the R&D side, Hitachi is accelerating the development of production technology which will improve regenerative medicine in the future. Hitachi offers integrated support for regenerative medicine by developing production technology and transportation technology through joint effort between industry and academia, supported by government project schemes. For example, Hitachi High-Technologies offers clinical testing equipment, Hitachi Healthcare offers Pre/Post Surgical diagnostic equipment, Hitachi Transport System offers cell transport technology (to ensure cells are transported under a controlled environment) and the R&D group offers automated cultivation technology. Convergence of regenerative medicine related technologies and R&D at Hitachi supports the vision for R&D in the future.

Key elements being addressed by Hitachi's Healthcare business include:

- Aging population and measures to address chronic disease problems
- Expansion of the healthcare areas such as prevention and elderly care
- Increase in national medical expenditure
- Medical standard improvement of developing countries
- Advanced medical & expanded use of IT solutions

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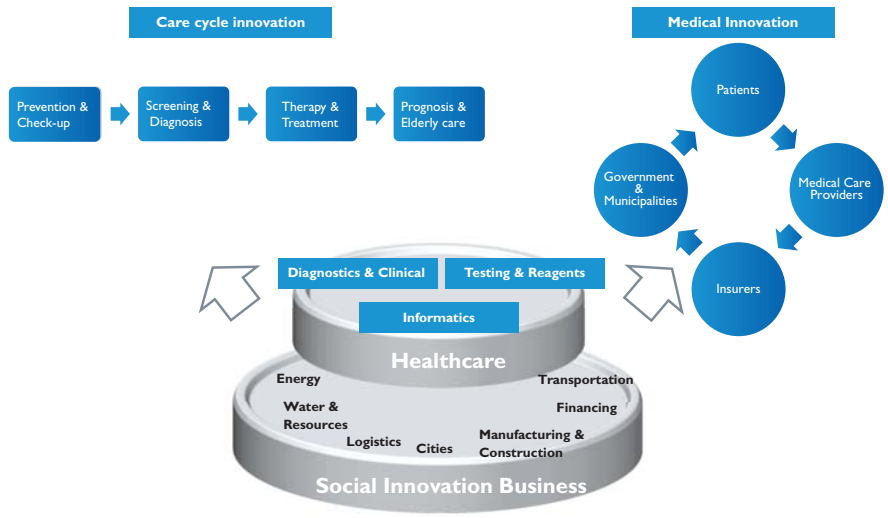
The key vision element is the 'hope to achieve longevity with healthy life' by improving Health and Safety and Quality of Life. In the aspect, Healthcare IT and medical technology supports the various needs of care cycles.Hitachi's aim is to improve Healthcare delivery throughout all stages and facets of a person's life.

16. Hitachi's Healthcare Business Vision
Healthcare Innovation for an Efficient and Improved Quality of Healthcare



Source: Frost & Sullivan

"Hitachi in Healthcare touches many parts which makes us unique. From a technology point of view we can get management of the information within the hospital, within a GP clinic, within imaging systems etc. Other parts of Hitachi are touching upon how we are measuring that information, how we are capturing MRI and CT procedures etc. The whole analysis is a huge part in Healthcare now, how we analyse the information rather than get information and store it, what do we do with that information. This then comes into how Healthcare is then going to change in the future."

Hitachi Data Systems: Nick Scholes, e-Health Solutions Specialist

"The global Healthcare market faces the dual challenge of ageing population and chronic diseases. As it stands, 70% of the total expenditure on Healthcare is allocated to managing chronic diseases. There is a lot that can be done as we move towards new technologies to manage and self-manage chronic conditions that will improve the health status of those patients."

Adrian Conduit, Hitachi Consulting

Hitachi's Role at a Society Level

The health and wellness of a community is a collective social responsibility. Medical technology and B2S business models have huge roles to play. A key element of the mega trend 'Health, Wellness and Wellbeing' is bringing sustainable healthcare to the total population of the planet

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A key sub trend is the facilitation of 'Hub-and-Spoke hospital care', with the hospital as a hub and clinics and residential care as spokes. In this case, Hitachi has equipped a critical health spoke in Avare, Brazil, with the technology needed to provide acute care services to a large area. This project shows a powerful example of B2S collaboration – a sound model for addressing healthcare challenges.

Other examples of Hitachi's role at a society level include the use of Particle Beam Therapy (PBT), an advanced form of external beam radiotherapy which is part of the Diagnostics and Clinical business field of Hitachi. PBT concentrates directly on the tumor while avoiding radiation spillover to the surrounding healthy tissue. PBT improves the quality of life for cancer patients since the patient experiences no pain during treatment and the procedure has very few side effects compared with that of traditional radiotherapy. In most cases, patients can continue with their normal daily activities while undergoing treatment. Because there are fewer side effects, PBT is expected to expand, especially for pediatric cancer treatment.

Hitachi's Role in Big Data

Hitachi's Social Innovation offering in Big Data combines Data System Solutions, Hardware, Software and Services to support Healthcare institutions with their information management in order to consolidate data efficiently. For example, Hitachi Data System's private cloud solution for Klinikum Wels-Grieskirchen begins to address the challenges of large volumes of daily data.

Other case studies include the Copenhagen project on hospital efficiency management. Bispebjerg and Frederiksberg University Hospital and Hitachi are creating solutions for increasing the efficiency of hospital management using IT.

Hitachi's Role in Care Cycle Innovation

Hitachi is looking at bringing technology and solutions to the entire care cycle in order to address current Healthcare challenges around the world. The aim of care cycle innovation across prevention and checkup, screening and diagnosis, therapy and treatment and prognosis and elderly care is to provide efficient and improved quality of Healthcare. A key focus has been on preventative medicine in order to predict and reduce lifestyle disease related medical costs through big data analytics on health check-up data.

Hitachi Live Example:

"Copenhagen project - hospital efficiency management"

Since 2013, Denmark has been promoting the "Super Hospital" concept, which involves the establishment of cutting-edge medical facilities in 16 locations throughout the country. The aim of the Super Hospital concept is to help reduce medical costs and increase the level of medical services.

Bispebjerg and Frederiksberg University Hospital and Hitachi have combined their experiences and expertise for this project. Hitachi provides the medical facilities and devices in the healthcare field, as well as expertise in the use of IT in the big data field. Bispebjerg and Frederiksberg University Hospital have a wealth of medical data and extensive experience in hospital management and operation. The aim is to develop new solutions targeting a variety of areas, including "next-generation hospital operations that combine data on facilities and human behaviors".

Customer Benefit:

Increase the efficiency of hospital operations in order to achieve specific goals set by the hospital (e.g. increasing the number of outpatients that can be received).

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Hitachi Live Example:

"National Health Service, England, Greater Manchester "

Hitachi and the NHS Greater Manchester are undertaking two projects in Manchester, UK. The first is around developing a federated data platform to facilitate the collaboration of medical information in order to enable the provision of any number of new services that leverage the highest levels of privacy and security.

The second is around diabetes care in the form of a lifestyle improvement programme. The IT system in this scenario is able to directly and immediately improve the healthcare provision for the local community. Data gives critical visibility on the health ecosystem informing the providers in Manchester of their challenges and facilitating pre-emptive planning to avoid widespread societal damage in the form of unaddressed demographic trends. The informatics platform pioneered by Hitachi enables security and analytics technologies to deliver several new high quality healthcare services and lifestyle improving programmes targeted towards tackling Diabetes. These healthcare needs are society driven and Government acknowledged but are clearly technology and IT enabled.

Customer Benefit:

By bringing together the analytics capability of Hitachi and clinical knowledge of the NHS, there is diagnostic support for providing personalised care.

Harnessing data and informatics to introduce knowledge based and predictive Healthcare can begin to alleviate some of the strain felt by demographic and societal trends, aging population, progressive long term condition development, and rising Healthcare costs.

National Health Service, England, Greater Manchester case study demonstrates how technology can be deployed across stakeholders in a B2S collaboration to effectively address global challenges. Hitachi is able to bring new IT driven solutions to existing healthcare challenges and leverage smart solutions to utilise data to prevent, rather than react to, healthcare challenges.The health challenges in Greater Manchester UK are not unique but rather a local example of a global phenomenon. Bringing intelligence, in the form of IT managed data into the process of healthcare is a global need. Furthermore the development of a pilot study like this enables all the relevant stakeholders from the Council, public health authority and the people of Greater Manchester to experience and co-develop the solution before deployment to a wider geographical area.

Conclusion

Social Innovation in Healthcare is poised to deliver a future in which we begin to address some of the key challenges around cost, quality and access. Based on the core elements of technology and new business models to bring about real positive change, our research for this Whitepaper has found that the opportunity for Social Innovation in Healthcare is enormous and we believe that Health, Wellness and Wellbeing is one of the most compelling areas for Social Innovation Business. It is a truly global phenomenon, with many different regional opportunities to make a key difference to people's lives, whether it's increasing access to parts of the world where Healthcare systems are limited, increasing quality of care, or driving efficiencies and reducing the cost of Healthcare.

We have also identified that in a world driven by connectivity and convergence, true Social Innovation in Healthcare is an enabler of a better future. A future where individual elements such as transport, water, sanitation, retail, security, education and energy are increasingly coming together – with Healthcare – to enhance people's lives and improve sustainability in communities.

Enabled by the digital transformation of Healthcare and powered by connectivity and convergence, we will see a future where Social Innovation facilitates the creation of innovative solutions that use big data analytics and the Internet of Things to add value.

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This value filters from the society level, to the system level, all the way down to the patient level. We'll see patients taking more control over their Health than ever before and see the rise of the power patient.

Hitachi is already leading the way globally in this vision of Social Innovation in Healthcare. Its focus is to deliver products and solutions across the care cycle, leveraging both Big Data analytics to capture, store, refine, analyse and visualize new insights and the Internet of Things where billions of connected, data-generating devices create a new Industrial Revolution. Hitachi promotes healthier living with connected health integrated care solutions by bringing together devices, data and caregivers to provide actionable insight.

With ageing population and cost pressures getting stronger, we have identified a $985 billion impact from Social Innovation in Healthcare by 2020. That's the combined impact of investment in big data, wearables & healthcare-centric apps, medical technologies, telehealth and the prevention, which all contribute to this stake.

"Companies like Hitachi are poised to benefit society, systems and patients by driving Social Innovation across the care cycle."

With Healthcare converging with advanced IT solutions, the players in the future Healthcare sector making the biggest impact will bring innovation to all elements of the care cycle, from prevention to elderly care. Companies like Hitachi are poised to benefit society, systems and patients by driving Social Innovation across the care cycle: using Healthcare IT to focus on prevention and using data platforms to connect care cycles; with disease related equipment and devices; providing solution services for Hospitals and creating a platform for further R&D in areas such as Regenerative Medicine. Hitachi's disease related solutions, for example, support screening & diagnosis as well as therapy. The key aim is to enhance diagnosis related functionality. Solution services for hospitals aim to improve regional medical care quality by connecting core hospital and clinics through care cycles. The aim is to provide solution services that optimise hospital and overall care cycles through IT.

It is these technological advances in particular that enable Hitachi to deliver Social Innovation in Healthcare, to improve patient outcomes by concentrating on medical expenditure optimisation, advancing medical equipment and hospital management improvement.

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Other Whitepapers on Social Innovation

Following our recent work to define and quantify the global impact of Social Innovation, this document is part of a new ongoing series of Whitepapers on Social Innovation in specific industries. We are continuing the theme of drilling more deeply into critical industry sectors, while maintaining the crucial themes of connectivity, convergence and cross-sector impact of Social Innovation to bring real improvements to infrastructure and to society.

We have recently completed a Whitepaper on Social Innovation in Transportation and Mobility and Energy.

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ABOUT HITACHI, LTD.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges with our talented team and proven experience in global markets. The company's consolidated revenues for fiscal 2014 (ended March 31, 2015) totaled 9,761 billion yen ($81.3 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes power & infrastructure systems, information & telecommunication systems, construction machinery, high functional materials & components, automotive systems, healthcare and others. For more information on Hitachi, please visit the company's website at *http://www.hitachi.com.*

Social Innovation microsite:
social-innovation.hitachi

Social Innovation blog:
www.hitachi.eu/social_innovation

Twitter: Global - @HitachiGlobal Europe - @HitachiEurope

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THE FUTURE IS OPEN TO SUGGESTIONS

Tomorrow starts with Social Innovation. All it takes is an idea: one simple thought that has the power to change the world. And it's through collaboration that these seeds of possibilities can grow, flourish and live. At Hitachi, we're developing innovative co-creation platforms for the Internet of Things. It's how we're bringing thinkers and doers together to accelerate Social Innovation for a better future.

social-innovation.hitachi

Hitachi Social Innovation

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