

Release of 'National Telecom M2M Roadmap'

Smart Infrastructure: Supporting policies and regulations'

Vigyan Bhawan, New Delhi

12th May, 2015

Rajendra Pratap Gupta
Chairman

Personal Connected Health Alliance – India

&

President & Board Member

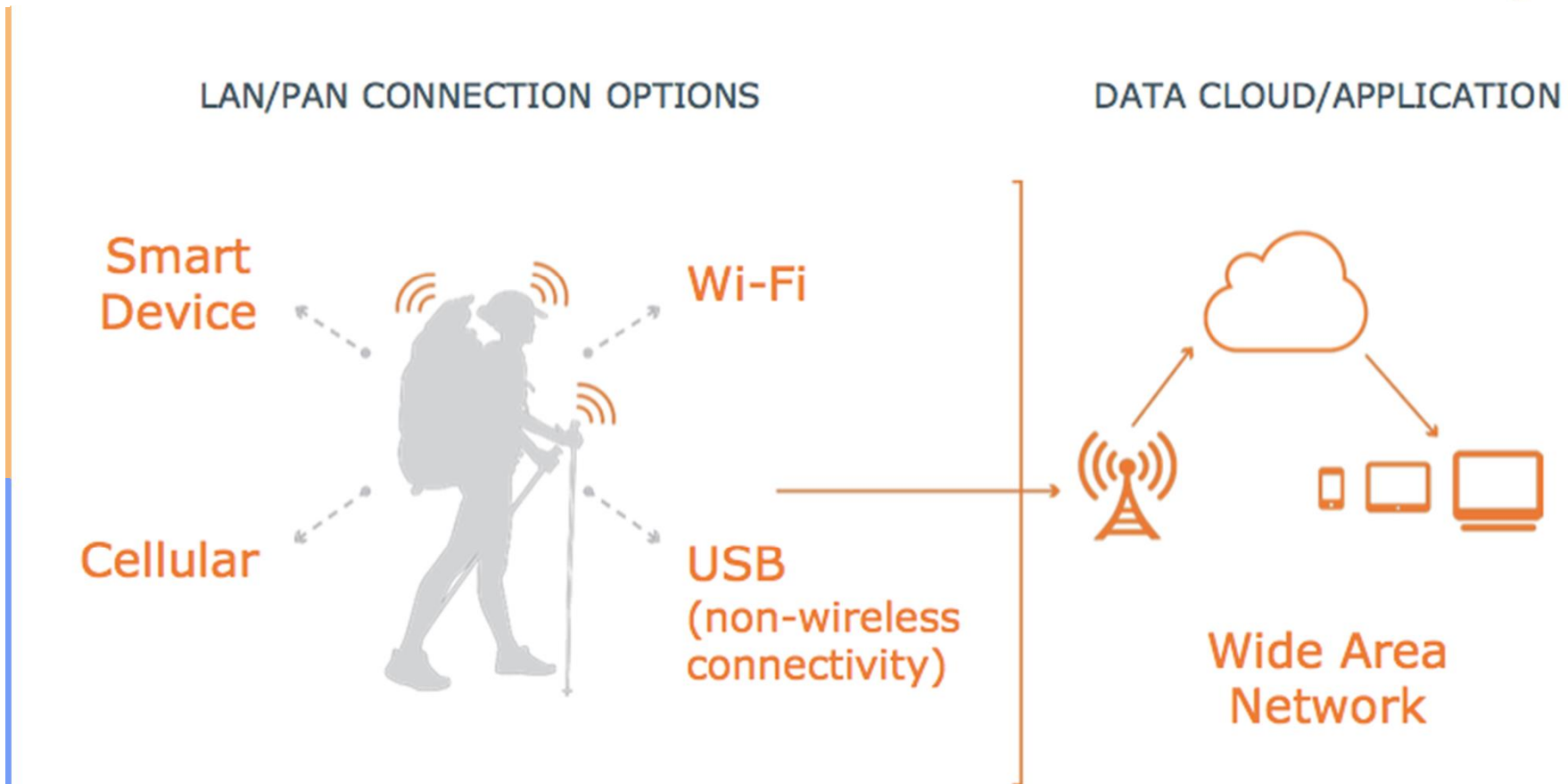
Disease Management Association of India (DMAI)

M2M - Health

***In Health , it is not just M2M, it is about M2H (Machine to Humans). And this makes a big difference, as we are dealing with serving and saving lives.
-Rajendra Pratap Gupta***

Human Re-engineered !

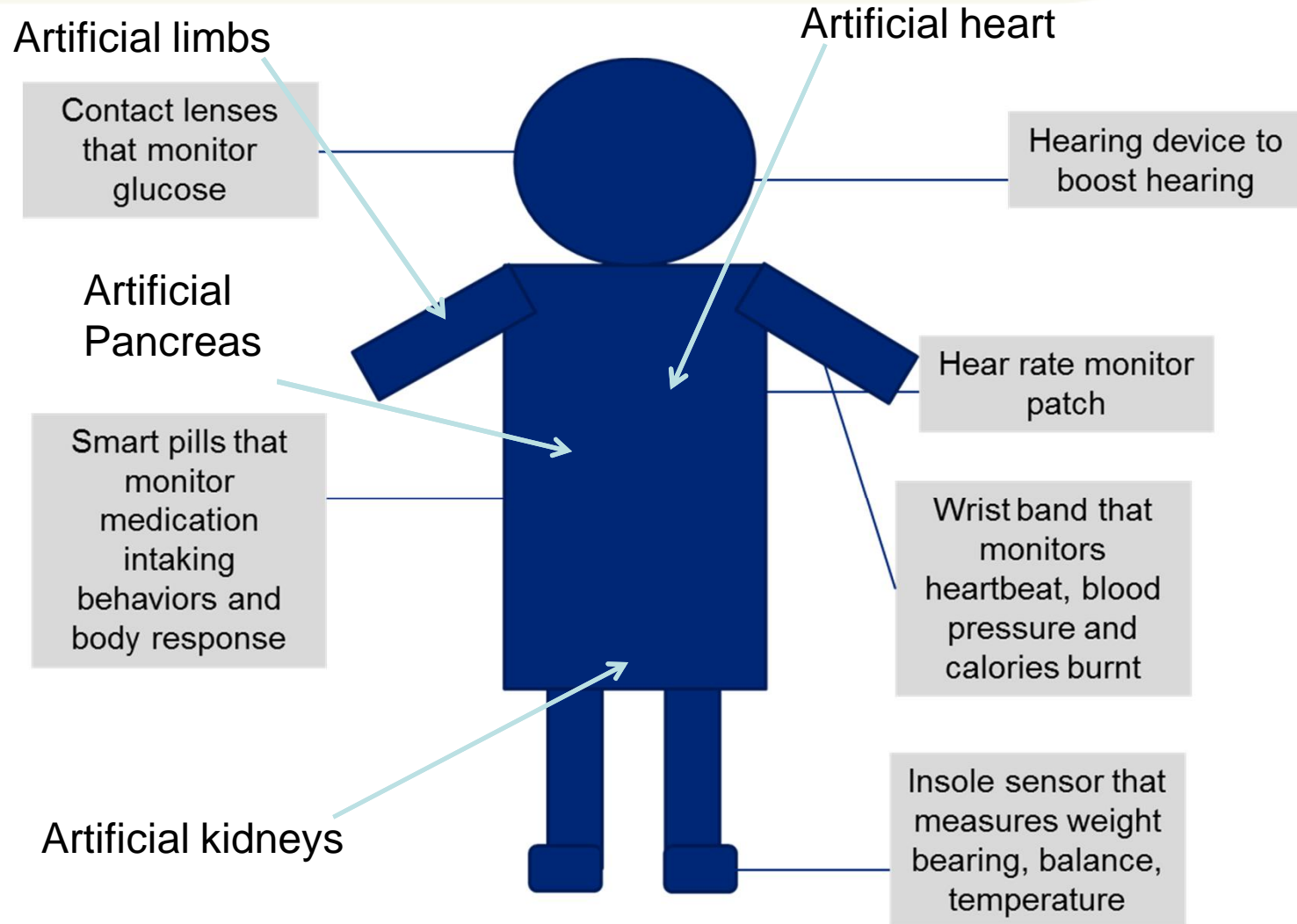




‘The transition from HUMAN being to ‘Hu-WAN being is now a reality’ - Rajendra Pratap Gupta



Part Human – Part Machine



By 2025, most of the organs could be replaced by machines (M2M)

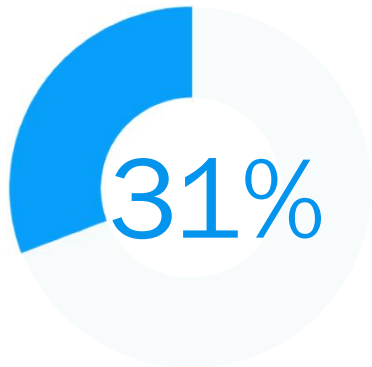
TIME

Never Offline.

The Apple Watch is just the start.
How wearable tech will change
your life—like it or not

BY LEV GROSSMAN
AND MATT VELLA



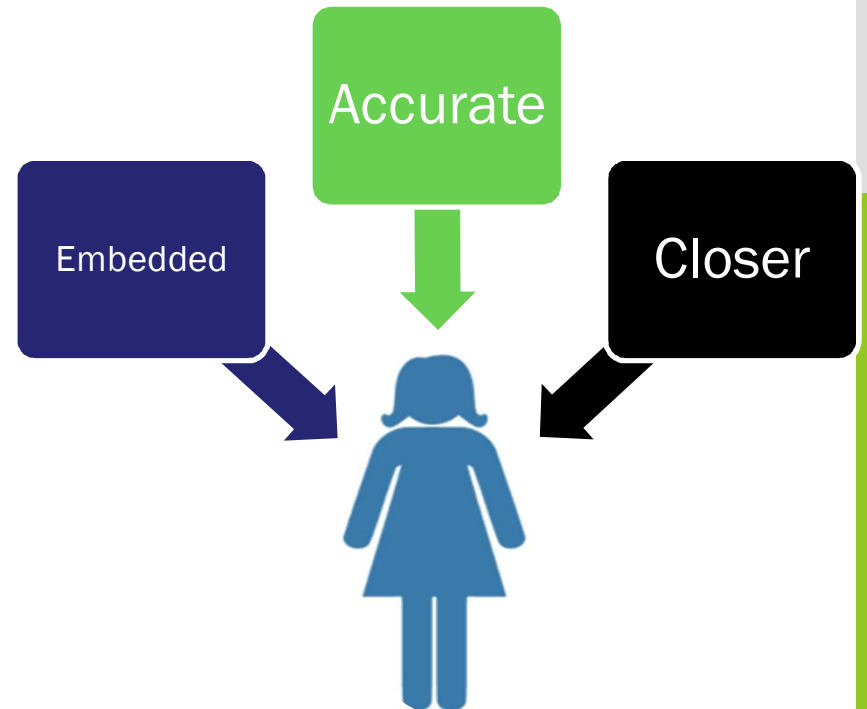


Patients looking for a mobile-enabled relationship

Q. How important is a mobile application to manage your relationship with your healthcare organization?
 n = 1,226 (source: IDC Insights Cross Industry Consumer Experience Survey, 2014)



Healthcare organizations investing in mobile apps for patients and telemedicine



Total = organizations investing in mobile apps for patients.
 Correlation between providers investing in native mobile health apps and telemedicine: Pearson Chi Square test, Asymp. Sig. (2-sided) = 0.57 %
 n = 179 (source: IDC Insights Health Insights Survey, 2013/2014)



Public Perception & Usage

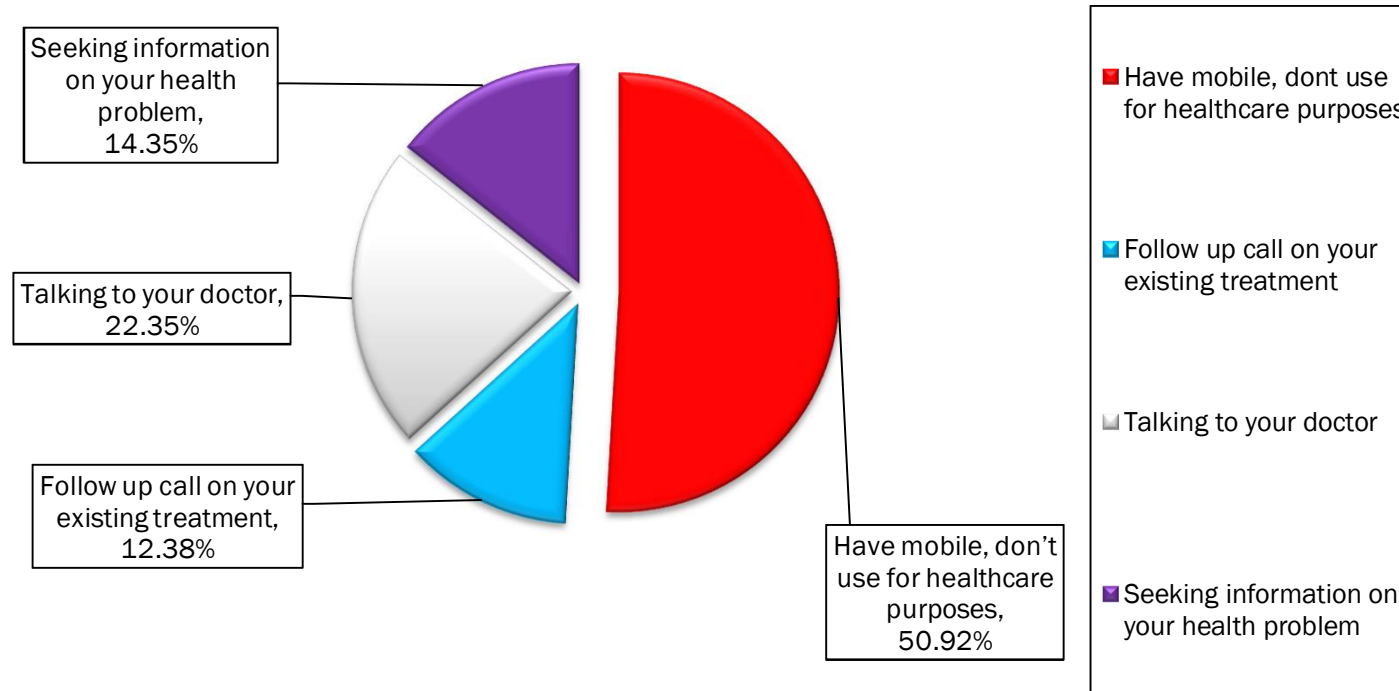


Reality check :

Status on ground ;

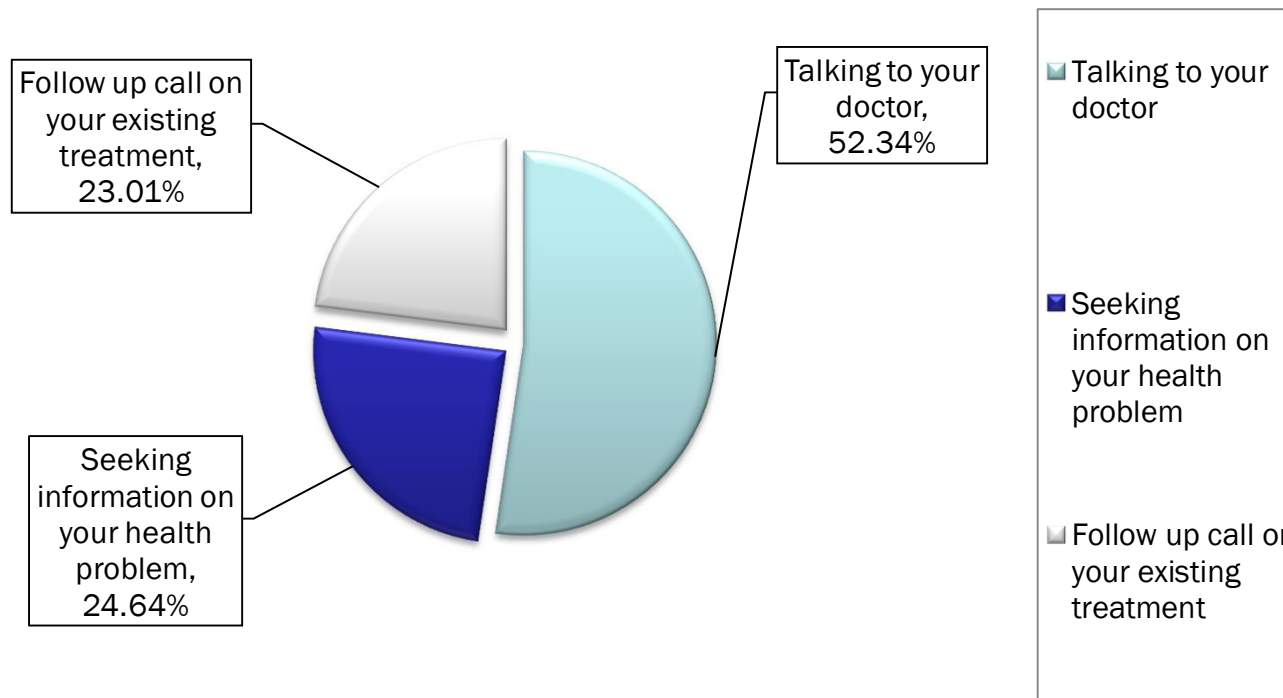
- ▶ Survey was conducted in Nov- Dec' 2013
- ▶ Covered 12212 Households (HH)
- ▶ 58099 Individuals across 12 states
- ▶ Large number of HHs had Mobiles (80.80%),
- ▶ Only few (9.08%) had Smart Phones
- ▶ Access to Internet facilities was seen to be large (32.59%)

Mobile phone usage for Healthcare :



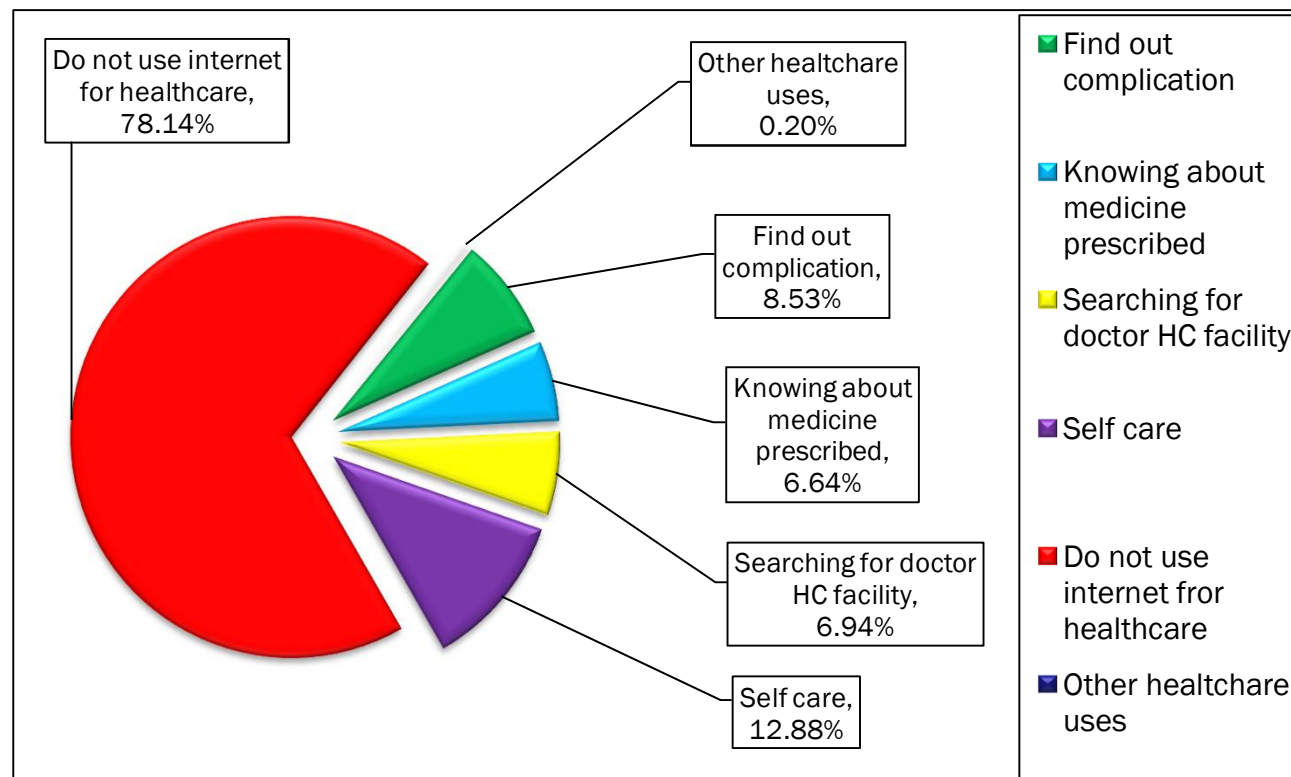
80.80 % HHs have Mobile Phones, & 49.18 % used it for Healthcare purpose

Smart phone Usage for Healthcare:



9.08 % HHs have smart phones, and 52.34 % used it for Healthcare needs

Internet Usage for Healthcare:



32.59 % HHs have access to Internet, & 21.86 % used it for Healthcare

World wide



- ▶ According to a report by research firm ON World, 18.2 million health and wellness **Wireless Sensor Networks (WSNs)** will be shipped worldwide **in 2017**, generating **\$16.3 billion** in annual revenue.
- ▶ **In 2013**, healthcare providers remotely monitored about **308,000** patients worldwide
- ▶ By **2017** that number should spike to **1.8 million patients**, the research firm predicts. This growth in **remote patient monitoring will save the world's healthcare systems up to \$36 billion by 2018**, according to a projection by Juniper Research[2].
- ▶ Worldwide M2M connected healthcare service revenue totaled **\$533 million in 2013**, an increase of 15 percent from the previous year
- ▶ [1] <http://mobihealthnews.com/19963/report-about-300k-patients-were-remotely-monitored-in-2012/>
- ▶ [2] <http://mobihealthnews.com/27638/51-digital-health-metrics-in-2013/4/>

NASA Telehealth System



Equipments



"Stethoscope



"Temperature monitor

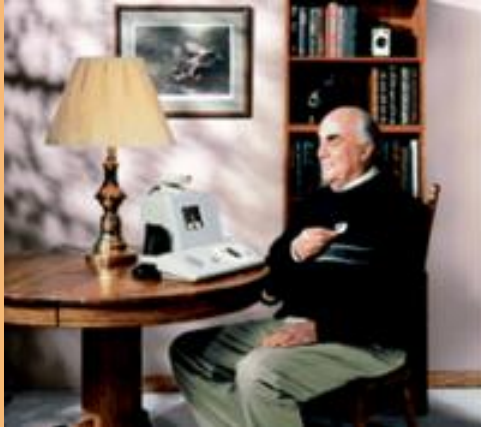


"Blood Pressure monitor



"ECG

"SPO2 (opt)





- Biometric Screening
 - SpO₂
 - Blood Pressure
 - Blood Sugar
 - Spirometry
 - Total Cholesterol
 - ECG
 - Triglyceride
 - Body Composition

The Big Shift



*Over the next one decade, we will move
from **hospital** based care to **home** based
care and finally , to **wearables***

-Rajendra Pratap Gupta

Chronic Diseases / Risks / Age Groups	2011
Diabetes	65 million
CVD	64 million
Cancer	12.7 million
Hypertension	100+ million
Obesity incidence	60 million
Tuberculosis	2.2 million
Senior Citizens	103 million

M2M Health – Standards

International Organisations working on standards

- **WHO**- World Health Organisation
- **ISO**- International Standards Organisation
- **ITU**- International Telecommunication Union
- **OneM2M** – It is a partnership project created by 7 SDOs, that publish telecom standards: TTC, ARIB (Japan), ATIS, TIA (USA), TTA (Korea) CCSA (China), ETSI (Europe), to avoid creation of competing M2M standards and are working to create standards for the common service layer. It has 226 members.
- **IEEE**- Institute of Electrical and Electronics Engineers
- **W3C** (World Wide Web Consortium) - W3C is an industry consortium which seeks to promote standards for the evolution of the Web and interoperability between WWW products by producing specifications and reference software.

International Organisations working on standards

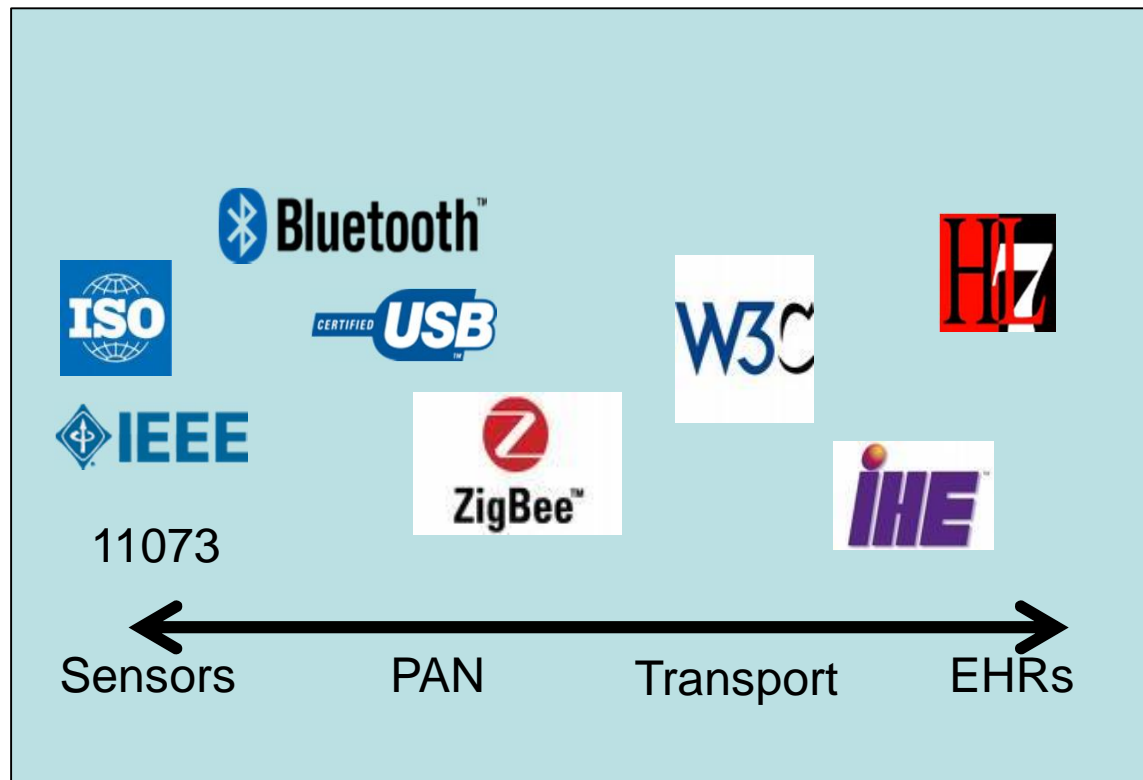


- **cen** - European committee for standardization
- **DICOM** - The Digital Imaging and Communications in Medicine (DICOM) standard is used for the exchange of images and related information.
- **GS1** - International organization that develops and maintains standards for supply and demand chains across multiple sectors.
- **epSOS** - European electronic Health (e-health) interoperability project, co-funded by the European Commission and 47 beneficiaries. It focuses on improving medical treatment of citizens while abroad by providing health professionals with the necessary patient data. epSOS identifies several means of interoperability which shall enable the use of cross-border services

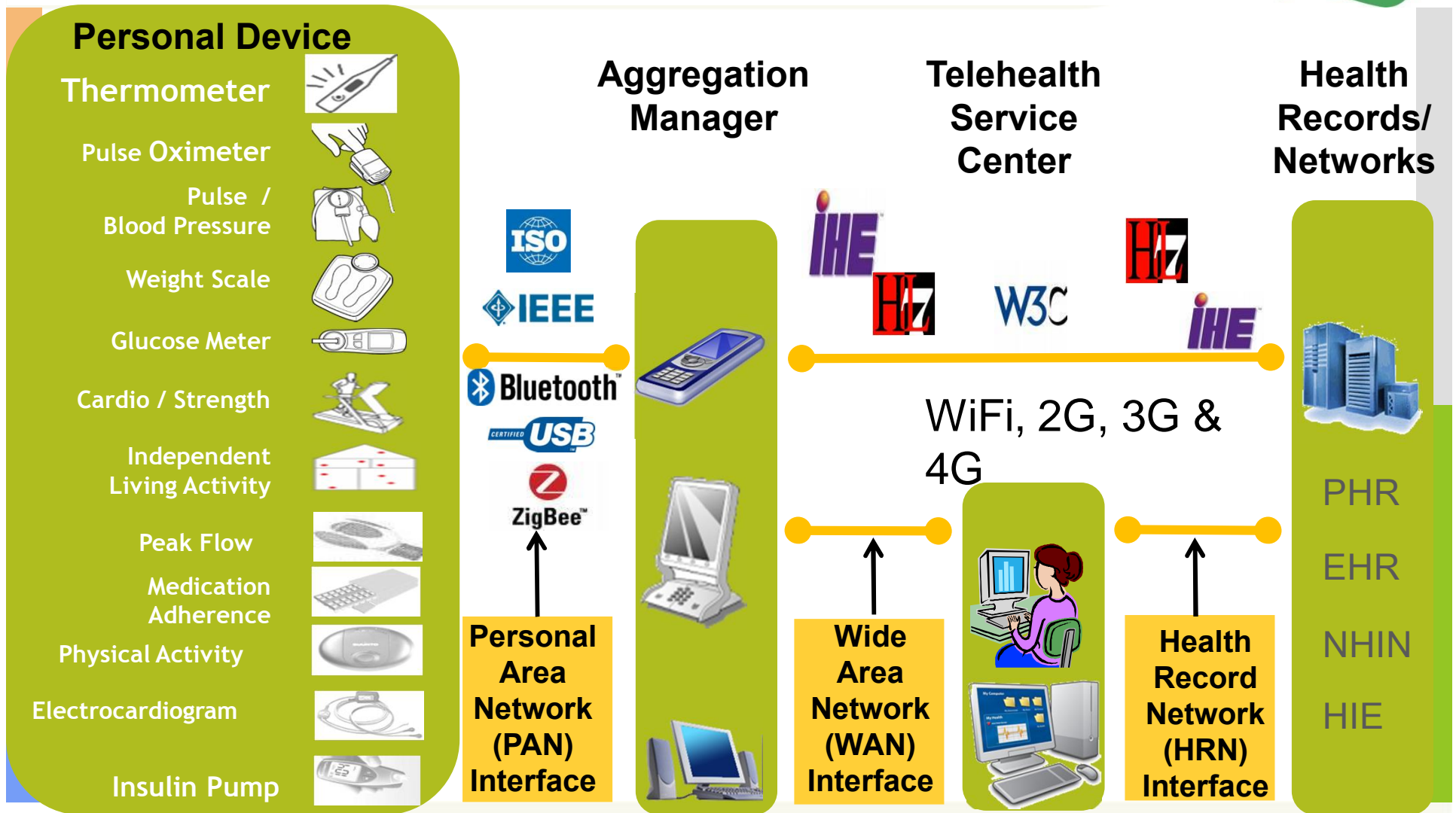
International Organisations working on standards

- **IHE (Integrating the health care enterprise)** - It works to ensure that all required information for medical decisions is accurate and available to healthcare professionals. It defines a technical framework for the implementation of established messaging standards to achieve specific clinical goals
- **Continua** - International non-profit industry organization enabling end-to-end, plug-and-play connectivity of personal health devices, systems and services in Personal Connected Health
- **HL7 - Health Level Seven**, is a standard for exchanging information between medical applications.

Standards Incorporated in Continua Design Guidelines : approved by ITU



Personal Health Devices : Interoperability Architecture approved by ITU



Standardization - Right timing

“ Make in India

“ Smart Cities

“ Setting up of NeHA

“ About 400 million at risk or chronic disease patients

Time has come to develop ‘India class standards for the world’, rather than just blindly implementing ‘world class standards in India’.

-Rajendra Pratap Gupta

Thank You !

Rajendra Pratap Gupta

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