XII INTERNATIONAL CONFERENCE MES-2018
'Modern Engineering Systems. Architecture of Health'

Global Healthcare Trends

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01 GLOBAL TRENDS

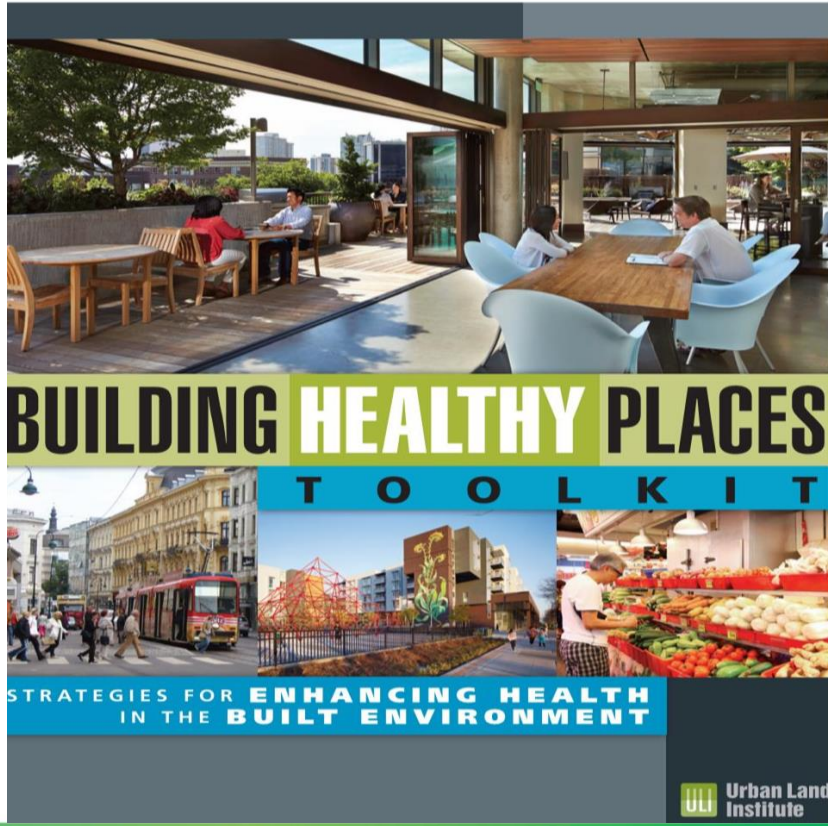
Socio-Cultural/ Economic

Technology

Science

02 SOCIO-CULTURAL/ ECONOMIC TRENDS

- Demographics
  - Aging Population
  - Lower Birth Rates
  - Longer Life Spans
- Resources
  - Capital Constraints
  - Scarcity
- Brand/ Experience
  - Informed Patients
  - Choices
- Health and Wellness
  - Cost Shift to Prevention
  - Climate Resiliency



03 SOCIO-CULTURAL/ ECONOMIC IMPACTS

Demographics

- Increase Demand and Strain on Services
- Higher Acuity Patients
- Need for Continuum of Care
- Increase need for Specialty Care

Resources

- Shifting to Lower Cost Settings
- Physician and Nursing Shortages

Brand/ Experience

- Exploring Better Experiences
- Bifurcation of Rich and Poor Care

Health and Wellness

- Salutogenic Approach
- Sustainable and Reliant Design
- Majority of all deaths caused by 5 preventable diseases

04 SOCIO-CULTURAL/ ECONOMIC RESPONSES

Demographics

- Higher Percentage of Critical Care Beds
- Flexible / Multiuse Patient Rooms
- Growth of Specialty Services
- Independent Living to Hospice Care

Resources

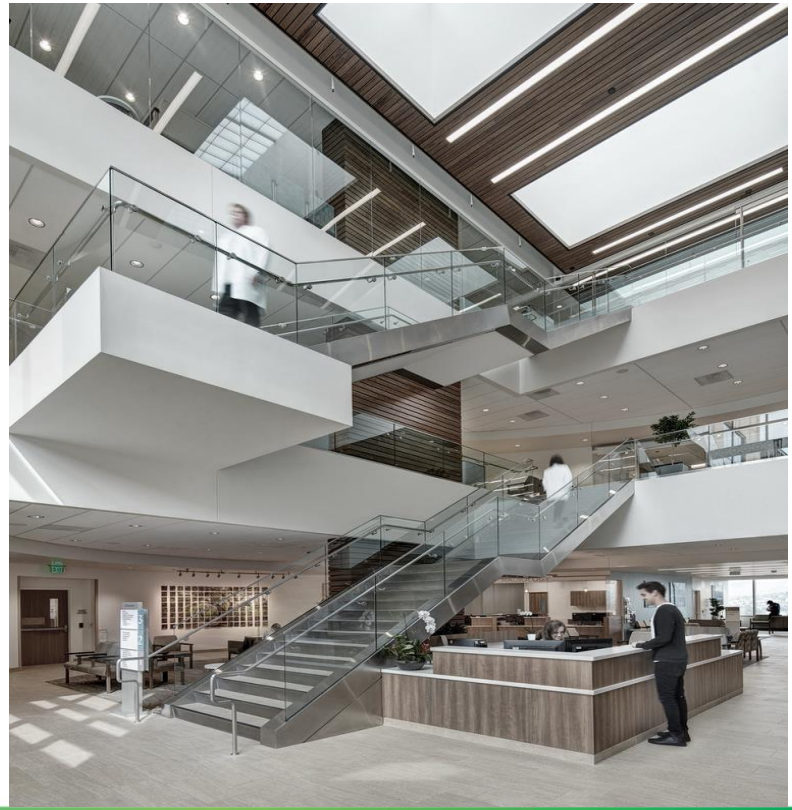
- Pushing Care to the Lowest Cost
- Robotics and Technology

Brand/ Experience

- Influence of Hospitality / Concierge Care
- Expectation of On-Demand Services

Health and Wellness

- Population Care Management
- Reduce Cost of Ownership



05 TECHNOLOGY TRENDS

Medical Technology

Nano Technology

Artificial Intelligence/ Machine Learning

VR/AR/IR

3D Printing

Autonomous Vehicles

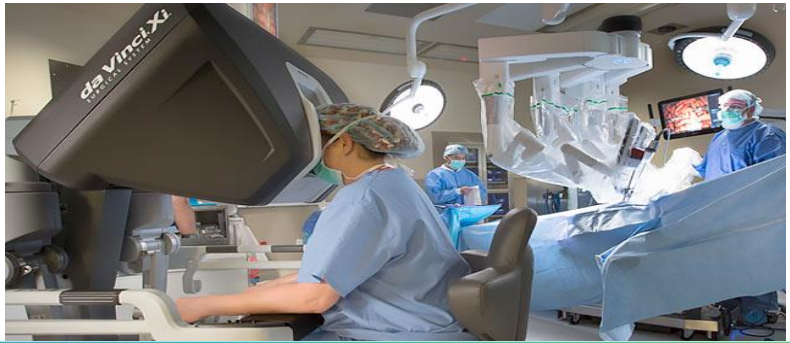
Building Technology

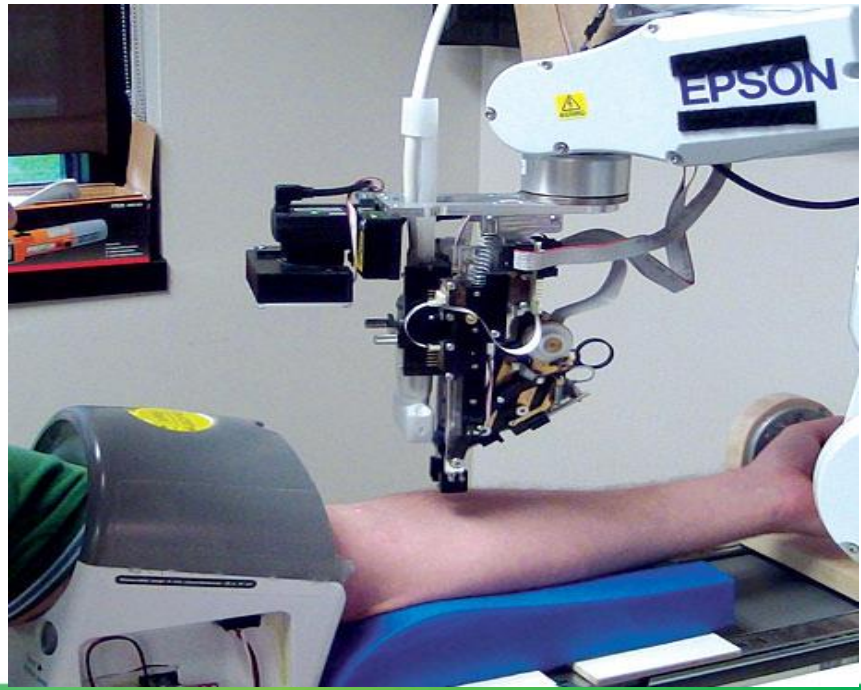
06 TECHNOLOGY- ROBOTICS

Surgical Procedures and Intraoperative Imaging

Phlebotomy

Infection Control





TECHNOLOGY- ROBOTICS

Delivery of materials and supplies

Telemedicine

Exoskeletons

08 TECHNOLOGY- ROBOTICS

Building Construction

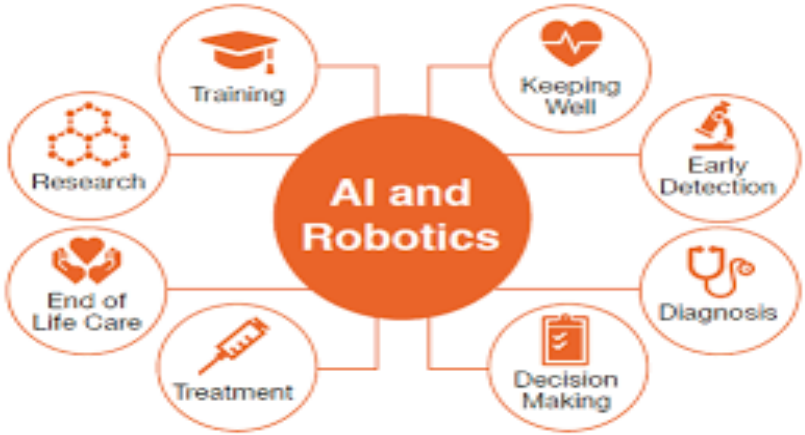
09 TECHNOLOGY- NANO

TECHNOLOGY- ARTIFICIAL INTELIGENCE/ MACHINE LEARNING

Big Data Diagnostics

Secure EMR Sharing

Improved Training



TECHNOLOGY- VR/AR/ IR

Virtual Reality

Augmented Reality

Immersive Reality

Design

TECHNOLOGY- MOBILE PLATFORMS/ APPS

Access/ Convenience

Population Care / Management

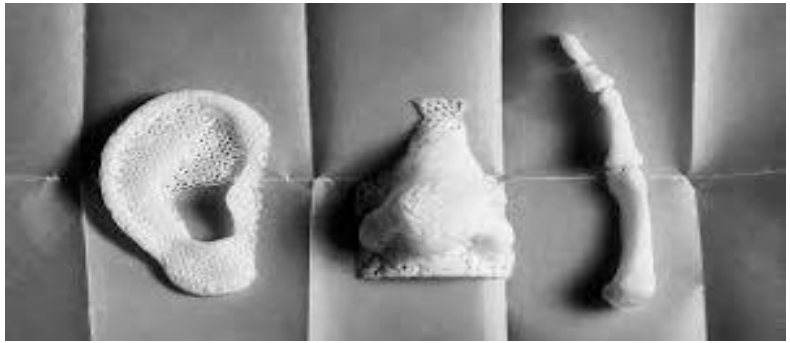
Training

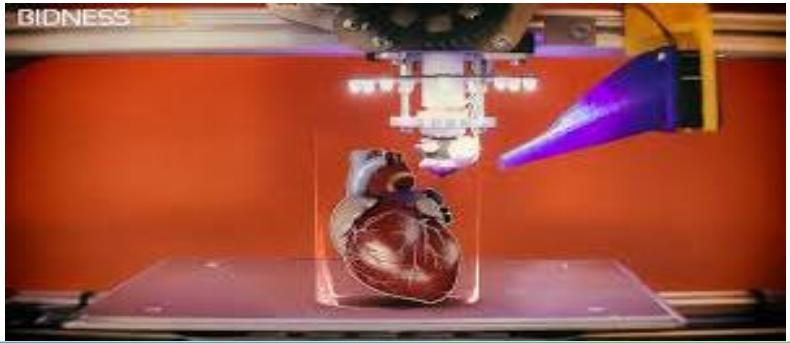
TECHNOLOGY- 3D PRINTING

Casts/ Prosthetics

Organs

Digital Fabrication



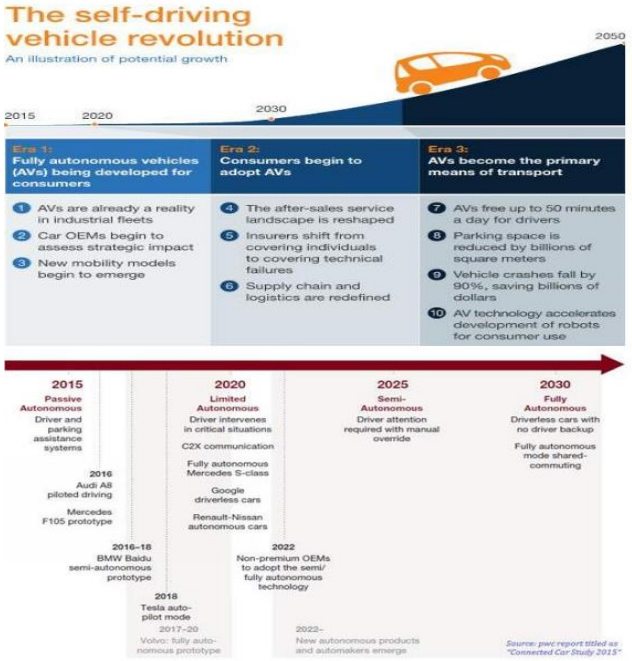


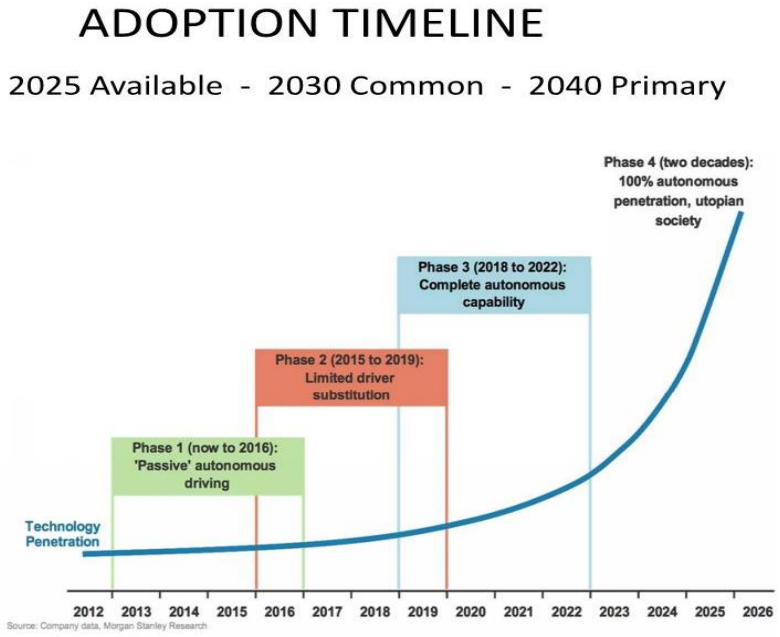
TECHNOLOGY- BUILDING

Light Transmitting Concrete
Regenerative Flooring
CO2 Skin Removal

TECHNOLOGY- AUTONOMOUS VEHICLES

90-95% of a Car's time is spent in Storage





TECHNOLOGY- IMPACTS AND RESPONSES

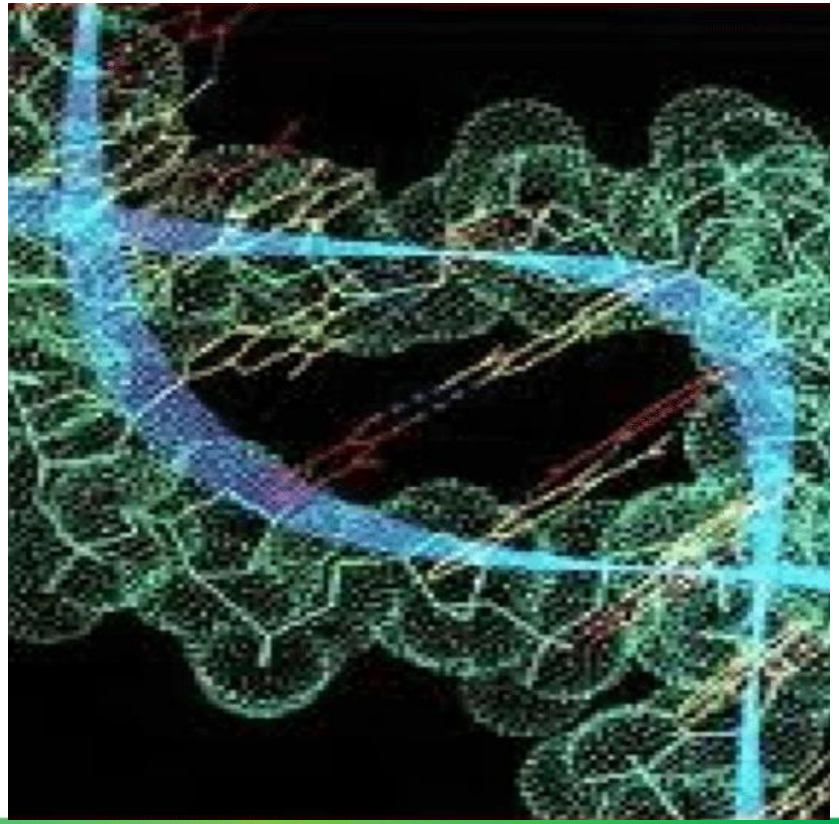
- Increased Life Expectancy and Outcomes
- Improved and Faster Diagnosis
- Expertise and Digital Fab Anywhere
- Mitigate Scarcity
- Automation will Affect Society's Fabric
- Improved Training
- Reduction in Need for Parking
- Land Use Opportunities
- Better Performing Buildings

SCIENCE TRENDS

Genomics

Bioinformatics

Pharmacogenomics



SCIENCE TRENDS- IMPACTS

Translational

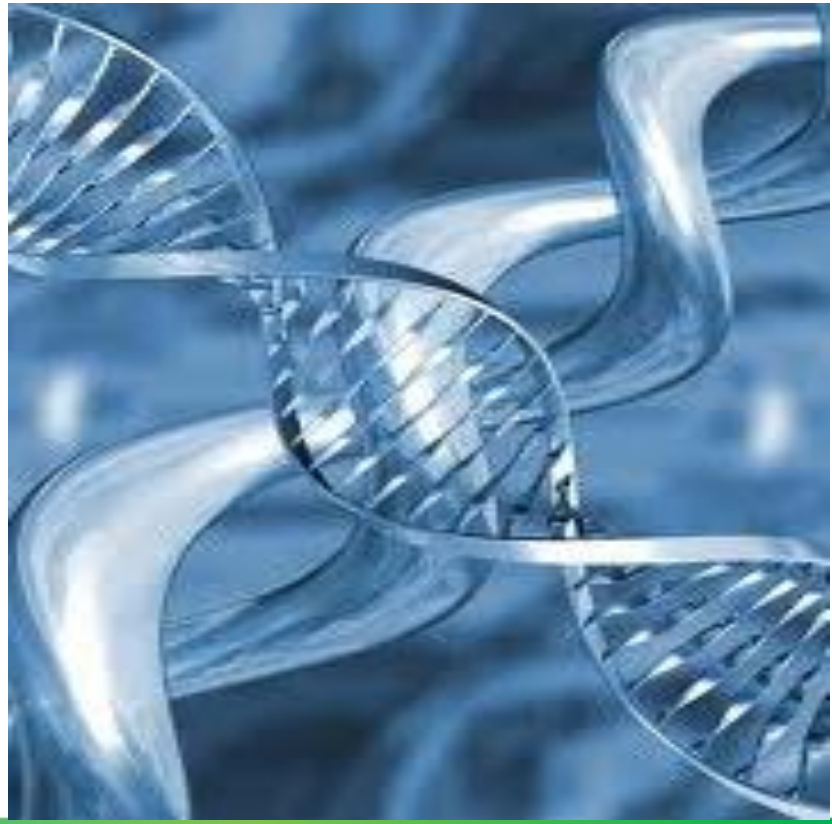
- Gene Targeting
- CRISPR
- Speed to Market Pharmaceuticals and Medical Devices

Clinical

- Reduced Clinical Trials
- Improved Patient Therapeutic Decision Making
- Infectious Disease Investigation

Personalized Medicine

- Targeted Drugs
- Improved Treatment Plans



SCIENCE TRENDS- RESPONSES

Translational Medicine Facilities

- Academia
- Healthcare
- Research
- Incubator

Genetic Testing and Editing

- Personalized Drug Treatment and spaces to support them
- DNA testing capability in clinics
- CRISPR at Home Testing

Better Materials

- Quantum Dots
- Graphene

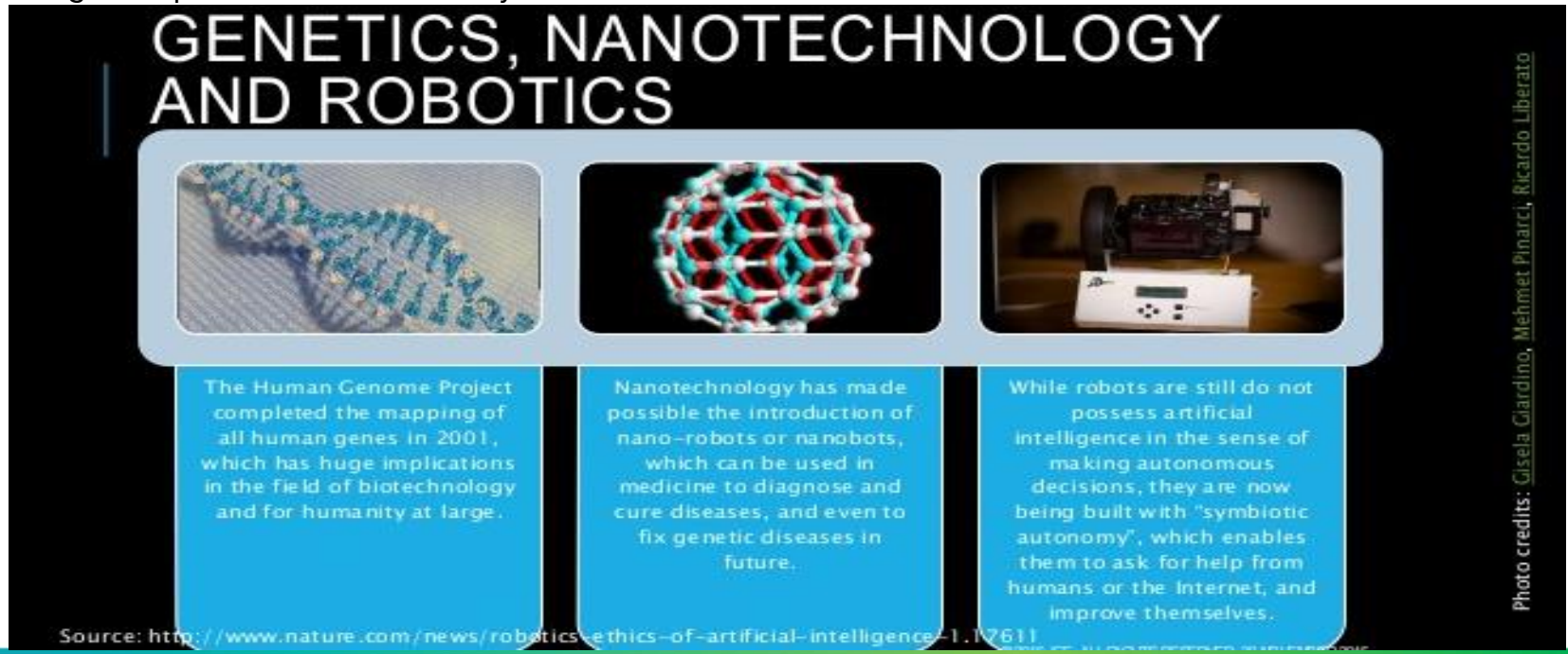
Reduction in Energy Costs

CONCLUSION- CONVERGENCE

Convergence of Science and Technology

Technology - Mitigate Socio-Cultural Issues

Design to Improve Your Clients Viability



Building future of healthcare