INNOVATION
AT THE FRONTLINES OF
KAISER PERMANENTE®

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Innovation and Advanced Technology & National Patient Care Services
Kaiser Permanente
2014

Kaiser Permanente Today….

The **LARGEST** nonprofit health plan in the United States

More than **9 million** members

Nearly **17,000** physicians

Serving **9 states** and the District of Columbia

37 hospitals

600+ medical offices

60 million+ square feet

The **LARGEST** private electronic health record deployment **in the world**

What is the Kaiser Permanente Brand?

fitness

empowerment

community

wellness

control   balance   goal-setting

stress-free   friends and family

happiness

Total HEALTH

red tape

invoices

confusion

sick care

greed

money

insurance

fine print

safety net

profit

bureaucracy

Lack of control

HEALTHCARE

Industry Recognition (opinion makers acknowledge our progress)

Look who's noticed…

The New York Times

FAST COMPANY

cnet NEWS

NBC BAY AREA

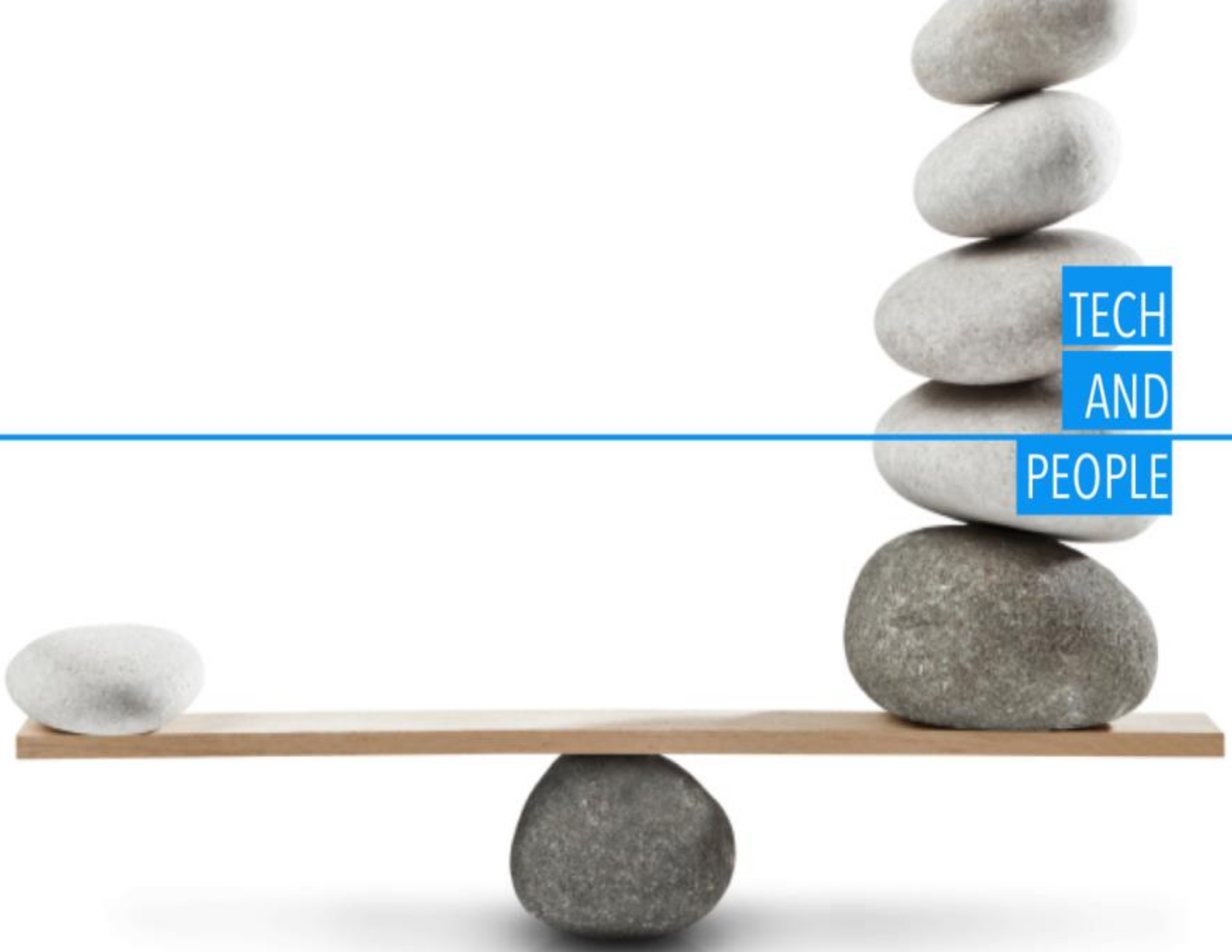San Francisco Chronicle

THE SACRAMENTO BEE

HealthData Management

ZDNet

EE|Times

MercuryNews.com
The Mercury News   Silicon Valley

The World's Most Innovative Companies 2010

MercuryNews.com
The Mercury News   Silicon Valley

Healthcare IT News

TECH
AND
PEOPLE

Digital Health Trends

Health plan competitors are adopting digital health technologies to transform customer engagement and business models

Integration

Legislation and greater outcomes focus catalyzing providers and payers to invest in integrated models (e.g. ACOs) and supporting technology

Aetna's Digital Health Strategy

Connecting providers and patients to influence behaviors

Web / Mobile

Digital devices and applications allowing for augmented member engagement, analytics-based care delivery, and real-time and continuous data capture

Humana's MyHumana and Humana Fit

These two mobile apps combine patient services with wellness engagement

Social

Social networking playing an increasing role in how patients manage their health, as a lever to improve health habits and attract new customers

Aetna's "Aetna Everactive" social community

Brings together virtual health and fitness resources with opportunities to participate in real-life events

Virtual Care

Payers using technologies to improve access and outcomes by connecting providers and patients wherever they are located

UnitedHealth NowClinic

24/7 live chat/video physician visits with electronic medical record integration offered in over 22 states

Digital Health Technology and Strategic Initiatives

Innovation & emerging technology is supporting care anywhere...

ROBOTS

REMOTE MONITORING VITAL SIGNS

© Omron

© A&D

© Nonin

MOBILE DIAGNOSTICS

© Mobisante

© AliveCor

© GlySens

HOME HUBS

© Health Buddy

Home

MEDICATION ADHERENCE

© Vitality

© Cadex

© Pill Phone

Proteus Raisin microchip pill

Hospitals, nursing homes, rehab etc.

Specialist and acute care

Care and backup beds for AHC

Mobile AHC team

Nursing homes, rehab units, etc.

Other caregivers (basic home care, home services, etc.)

Offers from non-caregivers (services, health advice, products, etc.)

PERSONAL EMERGENCY RESPONSE

© LifeWatch

Products not endorsed by KP

The future is here…

Speech & Gesture Based Interfaces

© CSM

© Evoluce

© Intel

Augmented and Virtual Reality

© Univ. Washington

© Wikitude
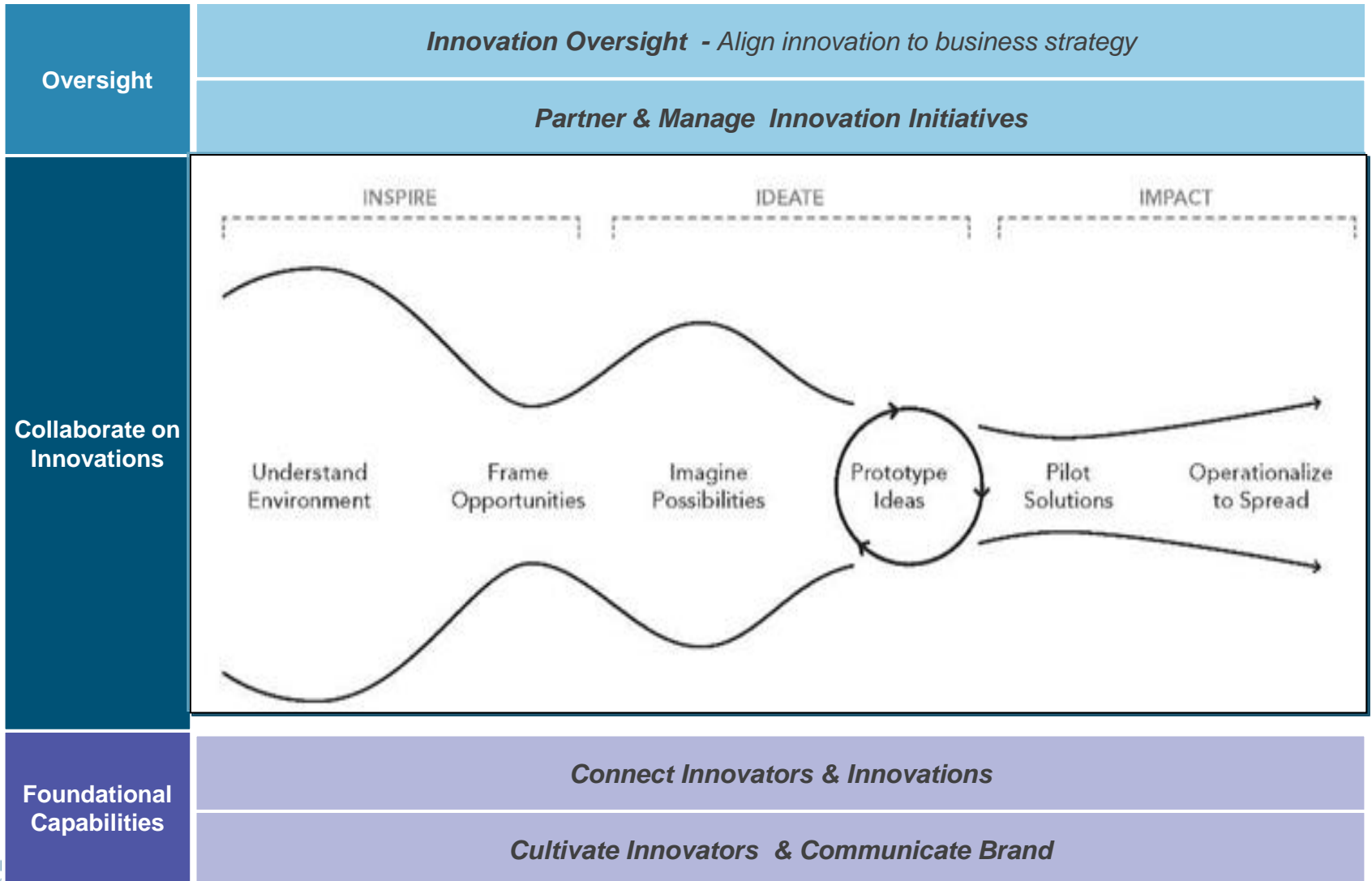

© Word Lens
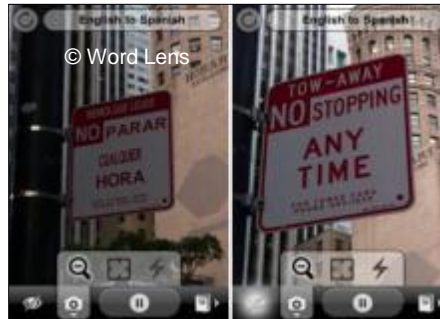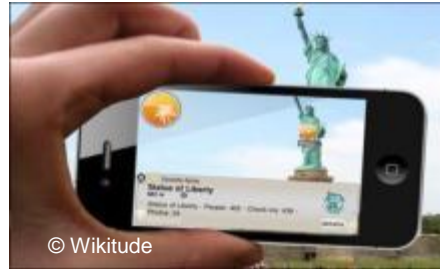
Implant & Brain Computer Interfaces

© mHealthWatch
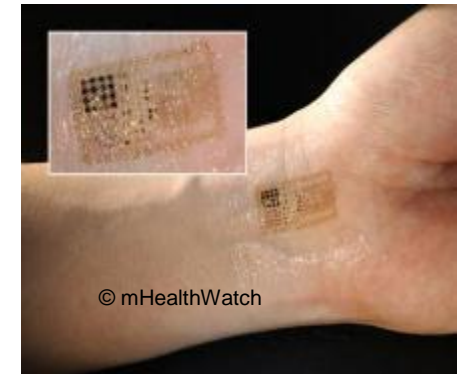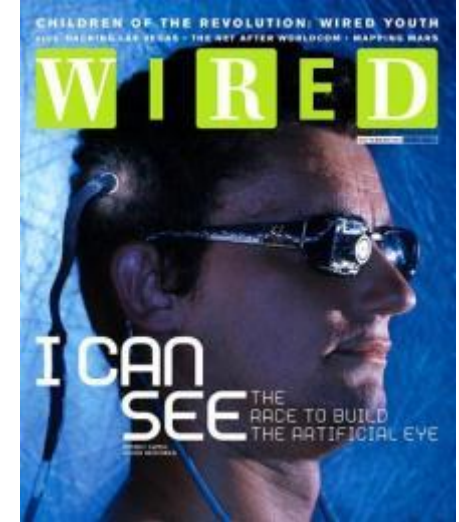
Products not endorsed by KP

Innovation Framework

Innovation Framework has been developed as a consistent taxonomy in partnership with KP Innovation Consultancy, Garfield Innovation Center, NFS and various KP innovators.
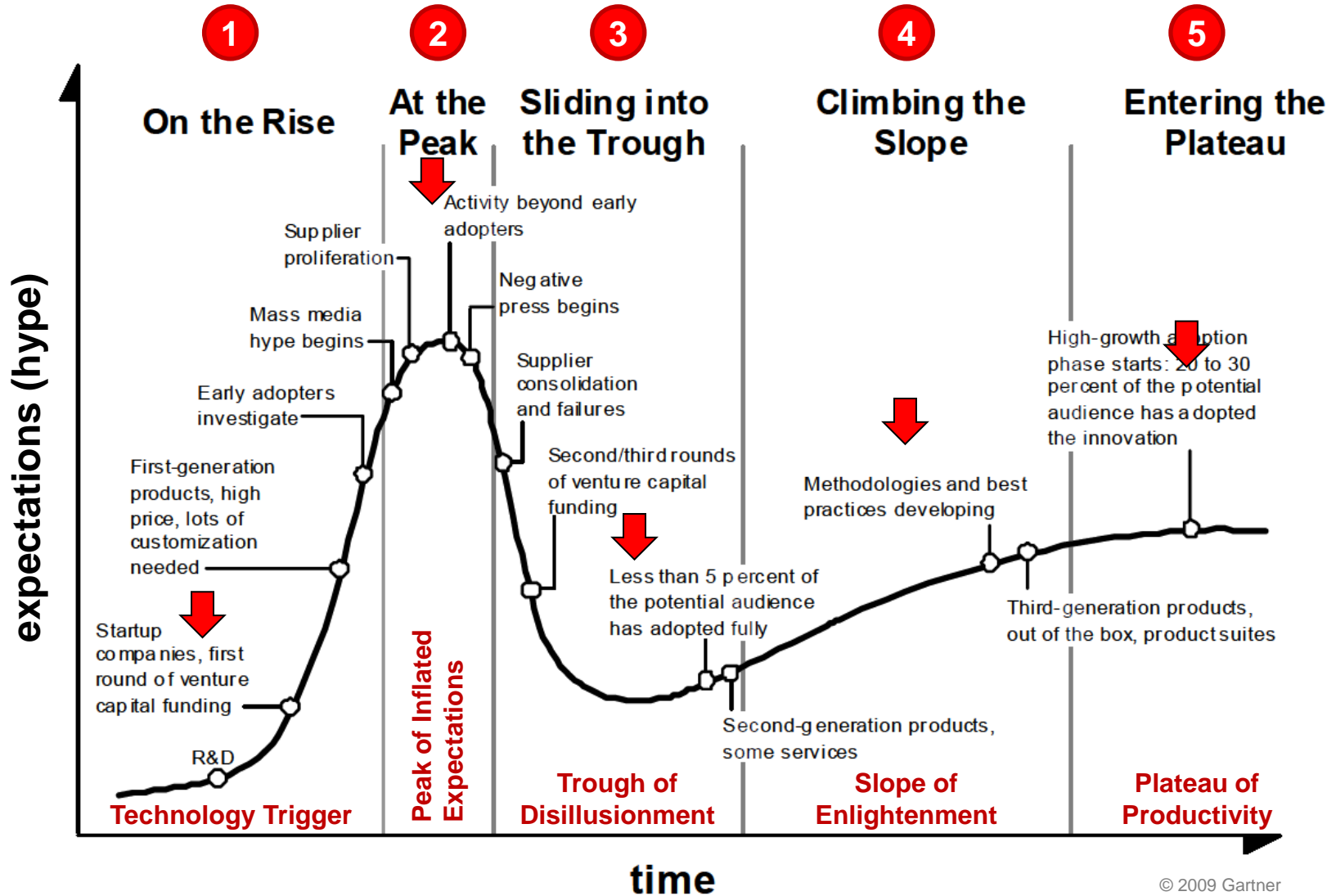
Oversight	*Innovation Oversight* - *Align innovation to business strategy*
	Partner & Manage Innovation Initiatives
Collaborate on Innovations	INSPIRE · IDEATE · IMPACT Understand Environment · Frame Opportunities · Imagine Possibilities · Prototype Ideas · Pilot Solutions · Operationalize to Spread
Foundational Capabilities	*Connect Innovators & Innovations*
	Cultivate Innovators & Communicate Brand

Digital Health
Technology and
Strategic Initiatives

CLINICIANS' NEEDS ARE CHANGING TOO

Gartner Hype Cycle for Technology

1 On the Rise

2 At the Peak

3 Sliding into the Trough

4 Climbing the Slope

5 Entering the Plateau

expectations (hype)

Supplier proliferation

Mass media hype begins

Early adopters investigate

First-generation products, high price, lots of customization needed

Startup companies, first round of venture capital funding

R&D

Activity beyond early adopters

Negative press begins

Supplier consolidation and failures

Second/third rounds of venture capital funding

Less than 5 percent of the potential audience has adopted fully

High-growth adoption phase starts: 20 to 30 percent of the potential audience has adopted the innovation

Methodologies and best practices developing

Third-generation products, out of the box, product suites

Second-generation products, some services

Technology Trigger

Peak of Inflated Expectations

Trough of Disillusionment

Slope of Enlightenment

Plateau of Productivity

time

© 2009 Gartner

We plan to meet
needs through a creative
collaboration and a coordinated
focus.

How do we fit into the KP Innovation Universe?

events

INNOVATION LEARNING NETWORK

INNOVATION LEARNING FORUMS

INNOVATION RETREAT

IAT TECH FORUMS

INNOVATION & ADVANCED TECHNOLOGY

SCAN   INCUBATE

CONSULTING   ACCELERATE

SOLUTION DEVELOPMENT

people

REGIONAL INNOVATION GROUPS

KP INNOVATES

INNOVATION HUNTERS

NATIONAL INNOVATION GROUPS

KP RESEARCH

KP VENTURES

MOBILITY CENTER OF EXCELLENCE

HEALTHWORKS & PRODUCT INNOVATION

INNOVATION CONSULTANCY

GARFIELD CENTER

CENTER FOR TOTAL HEALTH

SCAL INNOVATION CENTER

places

DESIGN THINKING METHODOLOGY

TECHNOLOGY VETTING

processes

OPERATIONAL READINESS

PEOPLE READINESS

RETURN ON INNOVATION

ORGANIZATIONAL WILL

WHAT IT TAKES TO SPREAD INNOVATION

FUNDING

SPONSORSHIP

TECHNOLOGY FIT

FOSTERING
INNOVATION
SOW, CULTIVATE, CONNECT

INITIATE GREENHOUSE CULTIVATE TRANSPLANT

SEEDLING OF AN IDEA

SPARKING CONVERSATION & IDEAS

Imagining Care Anywhere
"A Living Prototype"

HOME WORK
SCHOOL COMMUNITY
HOSPITAL CLINIC
CONNECTED CARE
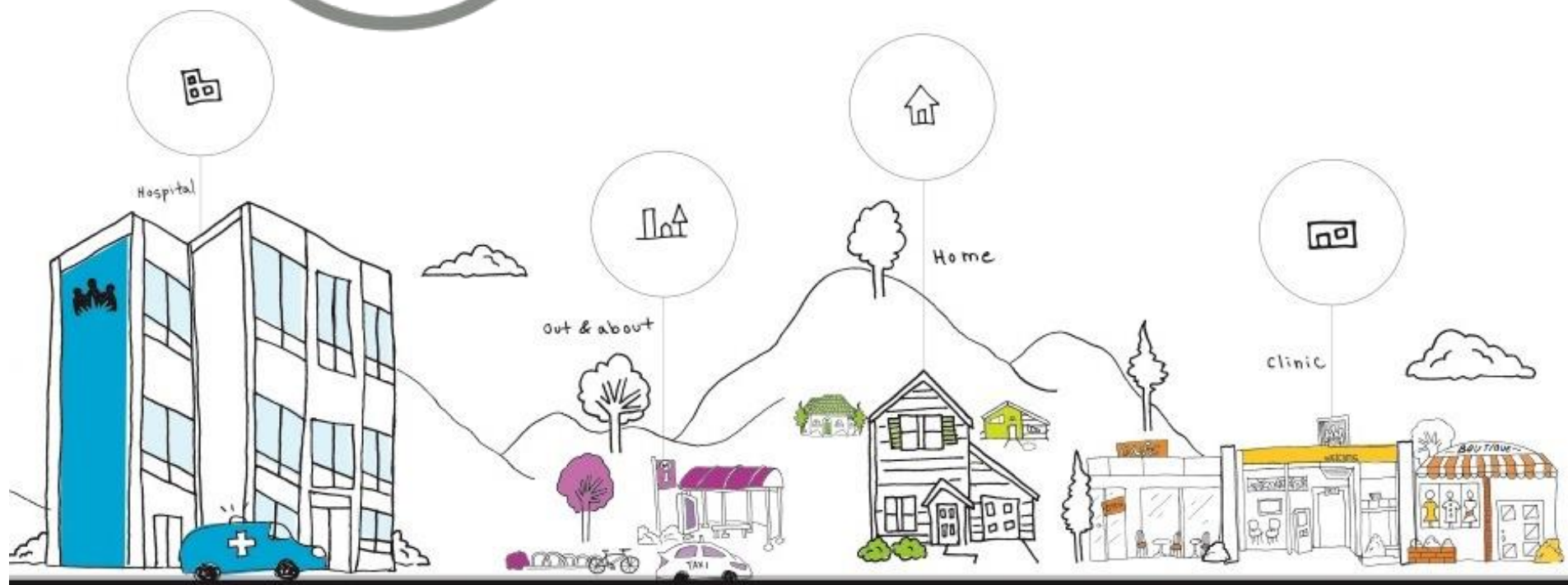
Imagining Care Anywhere® places the member at the center and shows how technology might enable health anywhere, anytime.

Imagining care anywhere

Digital Health
Technology and
Strategic Initiatives
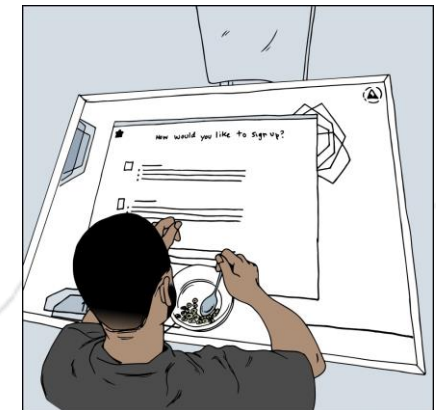
Imagining Care Anywhere

Care in the future will be delivered anywhere which are incredibly and increasingly well supported with great technology

Technology enables greater and more personalized access

HOSPITAL

HOME

CLINIC

Out and About

DIGITAL HEALTH

Home

The home becomes the primary site for care and care tools will be onsite in many people's homes

CUSTOMIZED

CONNECTED

COORDINATED

Electrocardiogram (EKGs), Ultrasound, Testing and Diagnostic tools, Telehealth, Remote monitoring

Supported by Electronic Medical Records (EMR) and Technology

Clinics

Diagnostic, therapeutic, communicative, remediative and with full EMR connectivity and linked to patient-specific care plans

- SPECIALIZED

- CONVENIENT

- COMMUNITY-ORIENTED

- Microdiagnostics, Digital Signage, Microclinics, Mobile Health Vehicles, Worksite Wellness

Supported by Electronic Medical Records (EMR) and Technology

© 2013 Kaiser Foundation Health Plan, Inc.

Out and About

Digital Health will be available wherever you are, all of the time

PERSONALIZED

DIGITAL

INTERACTIVE

Mobile Health Apps and
Devices, Care Tracking
Electronic Consults
Care Monitoring

Supported by Electronic Medical Records (EMR) and Technology

Map labels: Retail Pharmacy, Main Hospital, Fitness Center, Primary Care Office, Church, Grocery Store, Therapist, Employer, Long Term Care Facility, Destination ME!, Chiropractor, Neighbor Caregiver

Hospital

Traditional facility-based care
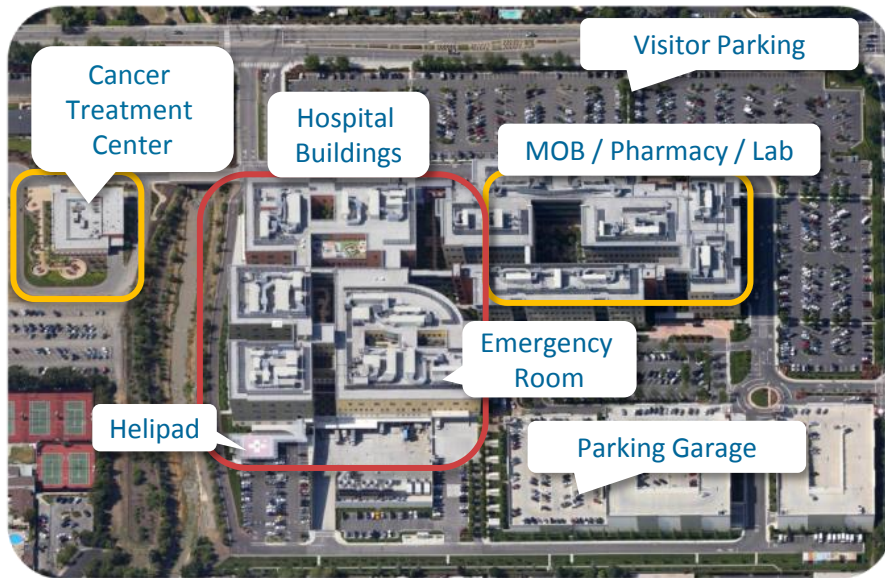
INTEGRATED

FACE TO FACE, LOCAL

COLLABORATIVE

Electronic Medical Records, Clinical Technology, Smart Surfaces, Interactive Patient Care, Virtual Nurse Assistants, Smart Beds

Supported by Electronic Medical Records (EMR) and Technology

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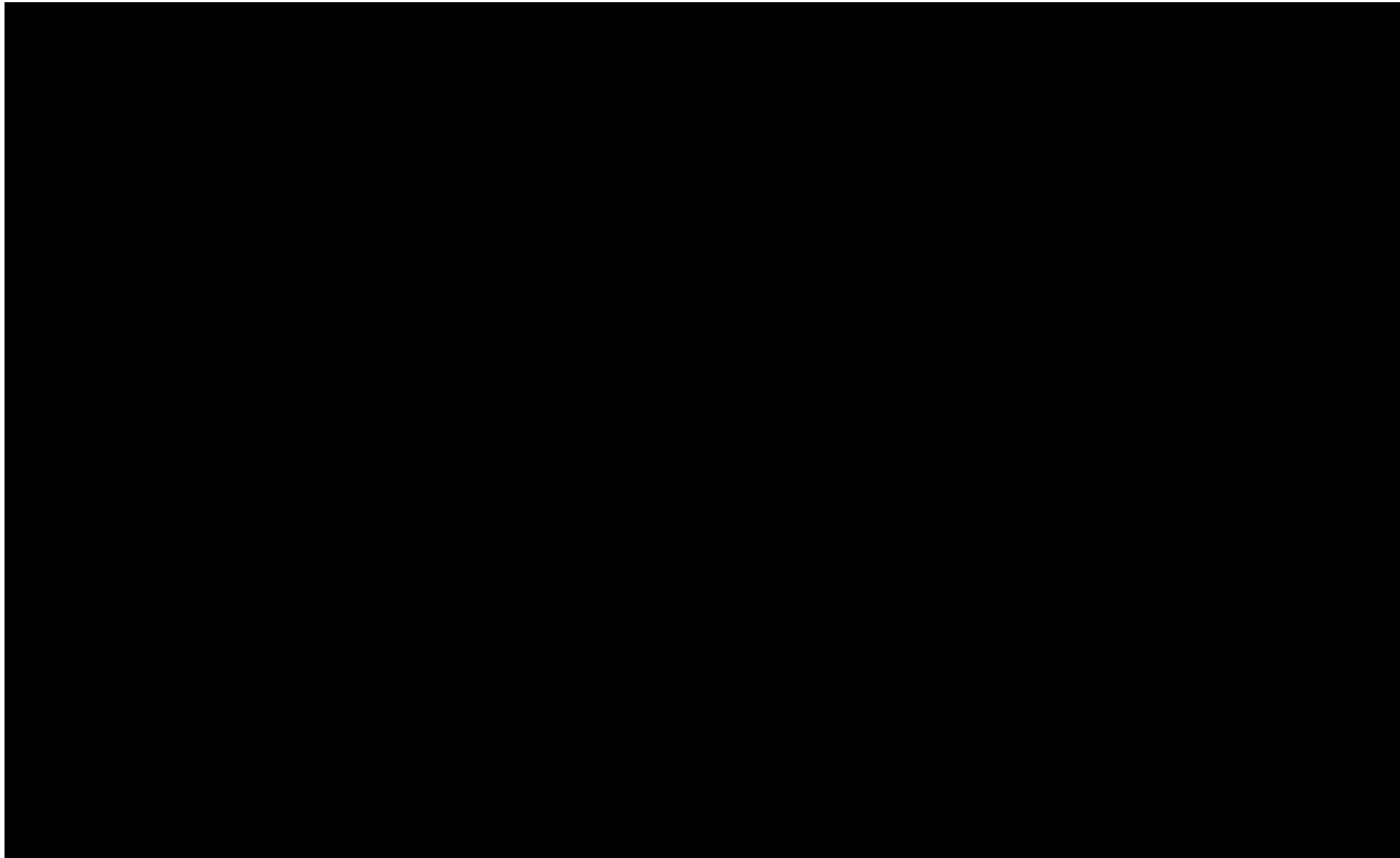
GREENHOUSE:
NURTURING IDEAS

INNOVATION
FUND FOR
TECHNOLOGY
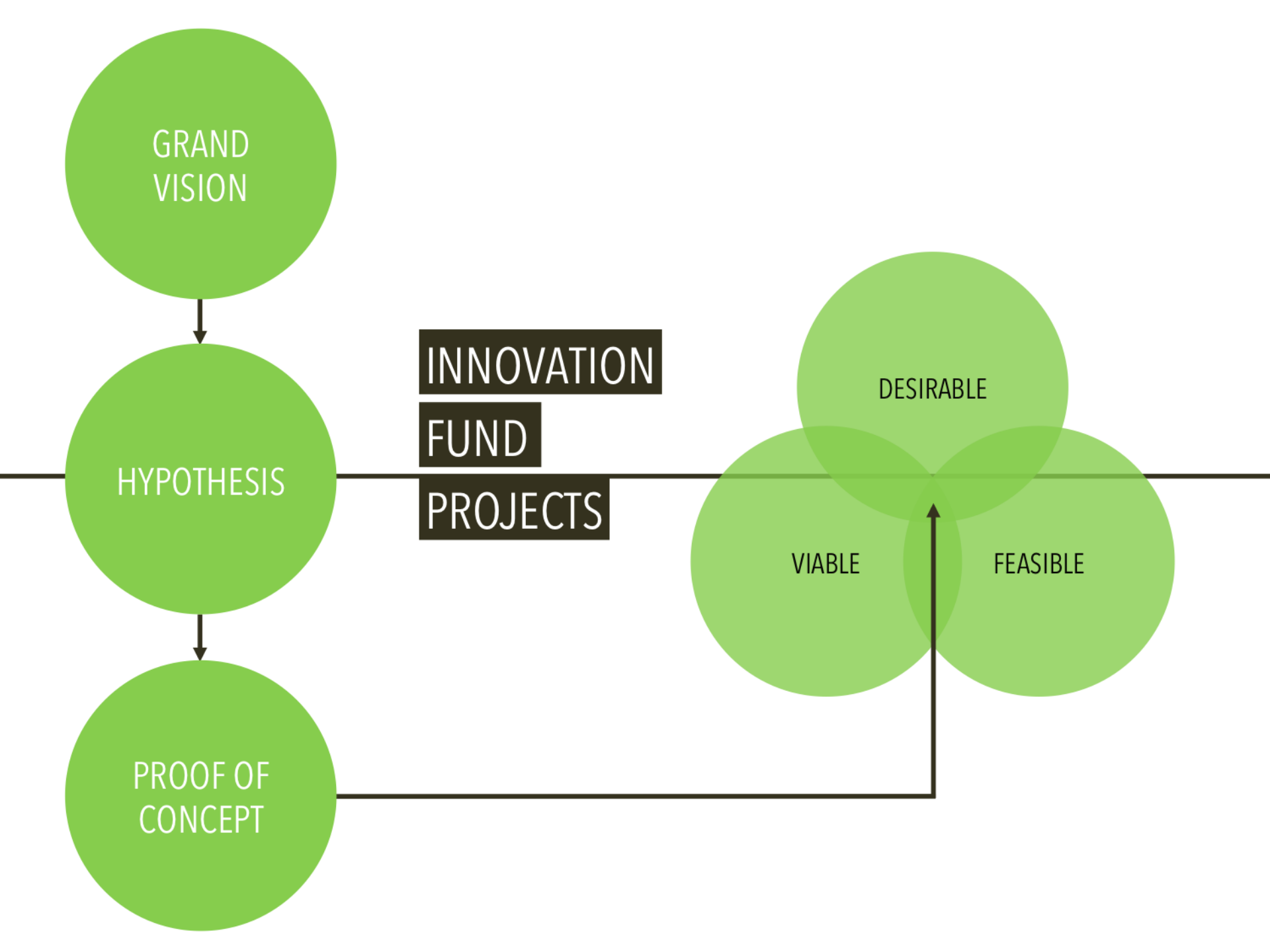
Engagement Process: Innovation Fund for Technology

KP IT established an innovation fund in 2008 to bring innovation to the top of KP employees' minds by providing incentives and pathway to launch creative new ideas

1

2

3

4

KP employee has an innovative idea

- 700+proposals received
- All regions represented

Employee attends office hours & submits the idea for review

- 39% of proposals from MD's/RNs
- 32% from admin/business
- 24% from IT staff
- 5% Pharm/Lab

Projects screened by fund team and reviewed by Board for approval

Innovation fund provides capital and supports the program

- 83 projects funded

Program Objectives

- Support innovators from anywhere in KP
- Reinforce the importance of and accelerate innovation within KP
- Focus on rapid prototyping, failing fast

CULTIVATING
ENERGY AND RESOURCES
TO DEVELOP IDEAS

Kaiser Permanente Innovation Ecosystem - sampling

* Innovation Consultancy

KP Regional Research Centers

KP Ventures & Corporate Development

Digital Tech Incubator

* Innovation Learning Network

KP Community Benefit

Garfield Memorial Fund

Mobility Center of Excellence

Innovation Lab

Regional Innovation Groups (SCAL 2020, NCAL Transformation, CO ETAG)

KP Center for Effectiveness & Safety Research

Permanente Medical Groups

Innovation Fund, Challenge & Awards

Center for Total Health

*Garfield Innovation Center

*Innovation Learning @ KP Learn

National Patient Care Services

Innovation Retreat & Innov Tech Forums/Spotlights

*National Facilities Services: Strategy Planning & Design

* Innovate Community: Ideabook, KP Innovates

Innovation Hunters

Kaiser Permanente Simulation

Clinical Advisors

Innovation Tech Research & Services & External Exchanges

INNOVATORS

Innovation Learning Capabilities

Innovation Facilities

KP Innovation Groups

KP Organizations

DHTSI

* KP Design and Innovation Groups

Digital Health Technology and Strategic Initiatives

External Innovation Exchanges

Knowledge sharing with innovators across industries

Open Innovation Exchanges are opportunities for Kaiser Permanente and other industry-leading organizations to exchange best practices and learn from one another about cultivating innovation within our corporate environments.

Details:

- Ideation sessions with Singularity Univ., Apple, Google, Parc, and PWC

- Upcoming: Kholsa Ventures

MiT

QUALCOMM LIFE
a Qualcomm company

intel

crossover HEALTH

P&G

DaVita.

HiMSS

SRI International

parc®
Palo Alto Research Center

ExxonMobil

AT&T FOUNDRY

CAESARS ENTERTAINMENT®

SAFEWAY

The Nueva SCHOOL

34

The Innovation Learning Network

Challenges

Heat Map: Rethinking the Care Model

© 2013 Kaiser Permanente.

Digital Health Technology and Strategic Initiatives

IT IS HARD WORK

Current Virtual Care Models

© Regenstrieff

© Sony

© Getty Images

© Kaiser Permanente

Live Video Consultation

Synchronous

Saves travel time

Improves access

Convenient

Everyone has to show up at the same time

Store & Forward

Asynchronous, send photo or video

Saves travel time *and* more efficient

Improves access

Convenient

Impersonal

Remote Monitoring

Monitor data

Early intervention

Saves travel time *and* more efficient

Convenient

Intrusive

Requires engagement

Guided Self Service

Personalized education and guidance

Social networks

Automated rules-based supervision

Requires engagement

External Pressures + Internal Alignment=Innovation

Kiosks

© HealthSpot

© DynaTouch

© SoloHealth

© Phoenix Kiosk

Mobile clinic © Kaiser Permanente

Professional Apps

KAISER PERMANENTE®

4 Phliips VS Camera

5

AirStrip Cardiology **1**

Mobisante **2**

Epic Haiku **3**

6

7
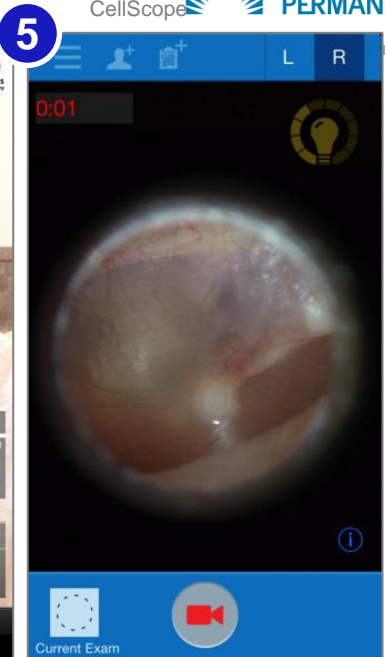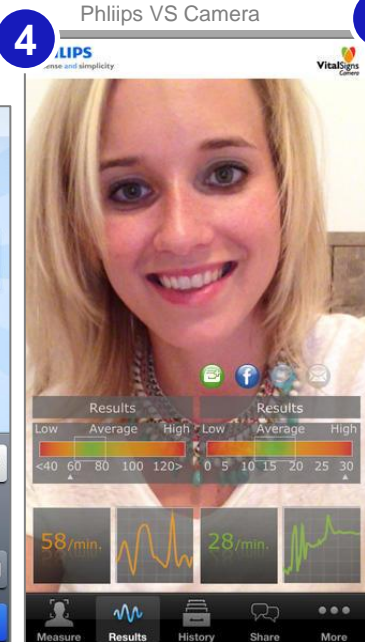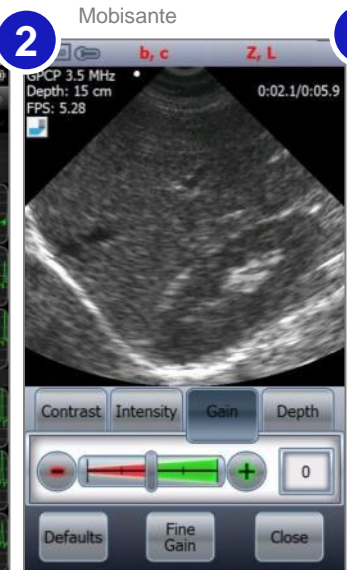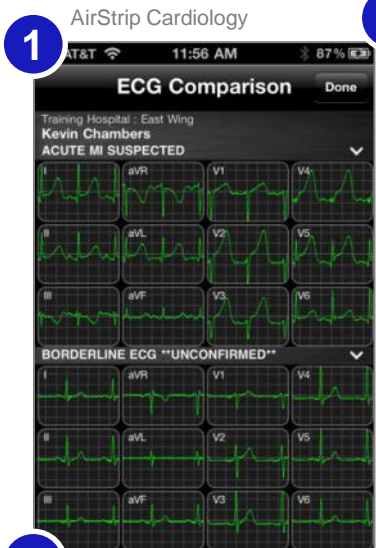
AliveCor

Mobile Stethoscope

Specialized Sensors

1 CheckLight – athletic head trauma cap © Reebok
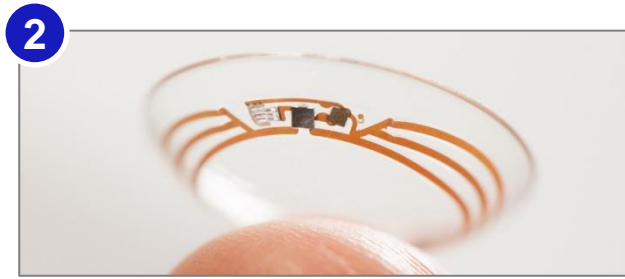
2 Contact lens glucometer © Google

3 Mobile ECG © iHealth
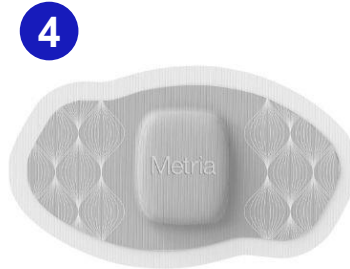
4 Metria IH1 – accel, temp, GSR, disposable © Vancive

5 June – sun exposure sensor © Netatmo

6 Skin glucometer © Dexcom

7 Diabetic foot ulcer insole @ Orpyx

8 iSonic – sensor cane @ Primpo

9 Le Chal – shoes for the visually impaired © Ducere Technologies
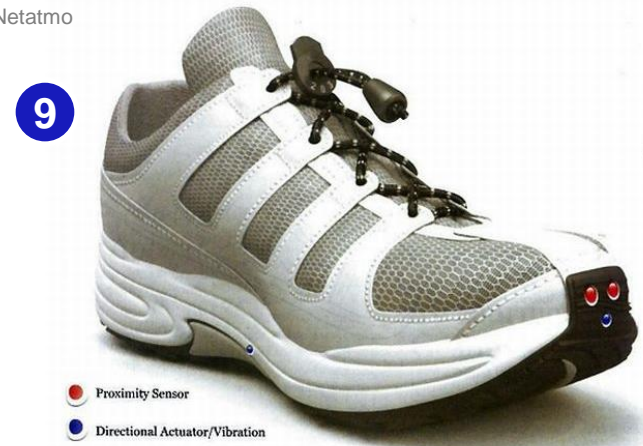
Proximity Sensor
Directional Actuator/Vibration

Digital Health
Technology and
Strategic Initiatives

Robots

Virtual assistant
© InteliWISE

Autom – weight loss coach
© Intuitive Automata

Paro – interactive baby harp seal

Legally blind driver in self-driving car © Google
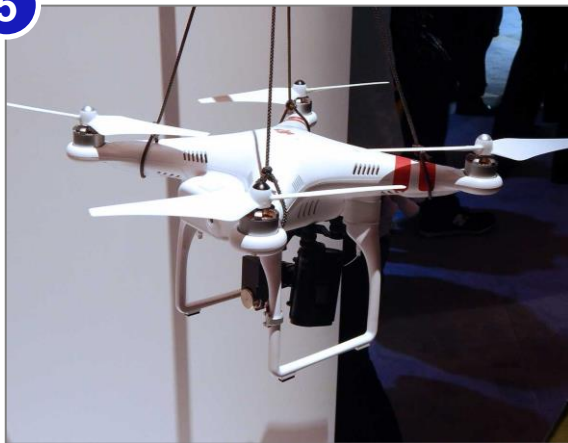
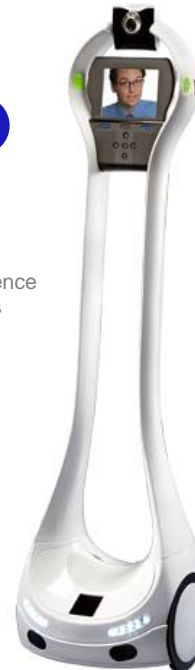Phantom 2 Vision quadcopter © DJI

© iRobot

Telepresence robots

© VGo
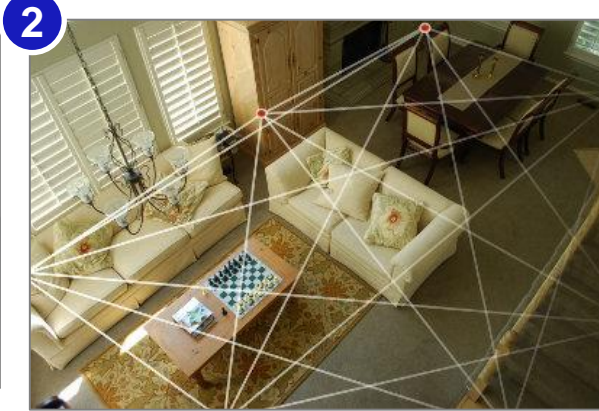

HD projector, audio, app-driven, room temp, CO_2, etc. © Keecker
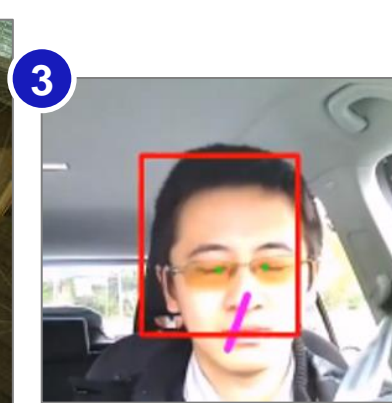
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VS sensing at a distance © Kai Medical

Radio nodes for movement tracking © Xandem

CarSafe - drowsiness app © Dartmouth

Buttocks ID - Adv. Inst. of Industrial Tech (Japan)
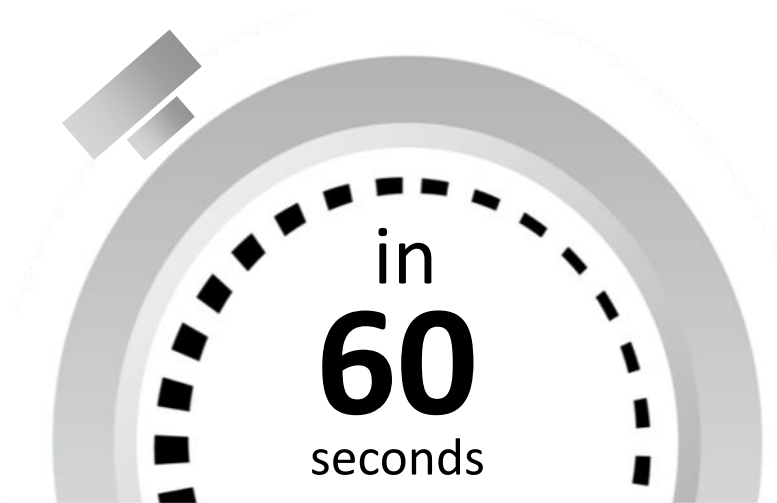

Under-mattress activity and VS sensing © EarlySense

LG – interactive mirror display © TechnoBuffalo

Real-time location system – RFID, Wi-Fi, ultrasound © Red Cell Innovation

The New Normal

Consumers live in a new, digital world and have come to expect the same experience with their health care

in **60** seconds

In today's digital world…

168,000,000+ emails sent

695,000+ Facebook status updates

370,000+ Skype calls

47,000+ apps downloaded from iTunes

What consumers want…

90 percent access to health info

83 percent access to personal medical info

72 percent manage their appointments

72 percent request prescription refills

…anytime, anywhere

Sources: Go-Globe.com, Accenture (2012)

So what is the future of healthcare?

In 2015 Uber, the world's largest taxi company owns no vehicles, Facebook the world's most popular media owner creates no content, Alibaba, the most valuable retailer has no inventory and Airbnb the world's largest accommodation provider owns no real estate.

CELEBRATE

INNOVATION