

# POST CES 2012: 4 TECHNOLOGY TRENDS TO CONFRONT CHILD OBESITY

In anticipation of this year's Consumer Electronics Show, UPSTREAM produced a Trend Guide for attendees, helping them to sort through the clutter and see how the consumer's world is changing.

As former CES winners and innovation judges for the last three years, we closely watch this event for opportunities to apply technological innovation to create broad social impact.

Building on this guide, we set out to explore how these technology and social trends could be leveraged to afford new ways to reverse the epidemic of Childhood Obesity. We have identified 4 key Technology Trends that we believe show the greatest promise. But first,



# WHY CHILDHOOD OBESITY?

We at UPSTREAM believe that the greatest human problems represent growth opportunities for brands that have the vision to embrace them. UPSTREAM has selected this issue because it serves as the causal basis for a host of societal ills, now and into the future. As innovators and design thinkers, we believe that good design is about solving the right problem, and that our innovation expertise creates the most impact when addressing causes instead of symptoms.

Childhood obesity has huge implications for reduced life span and reduced quality of life, robbing children of the basic qualities of childhood, and sentencing them to lifelong battles with largely preventable chronic diseases such as diabetes, heart disease, high blood pressure, and cancer.

Beyond these social costs, the economic costs in both healthcare spending and reduced competitiveness in the workforce have staggering implications for our nation's ability to sustain itself and compete in the global economy. We believe this issue can't wait as it ravages our youth and children around the globe.

## SHORTER LIFE SPAN

*"This generation of American children is the first in 200 years who have shorter life expectancies than their parents, and the major cause is obesity."*

*-Kathleen Sebelius, US Secretary of Health and Human Services*

## DECREASED QUALITY OF LIFE

*"In children, obesity rates are about four times higher than they were, say, 40 years ago. Part of the problem is we don't see the full impact of obesity until many decades later... 20 and 30 years down the road are going to have horrendous problems that we've really not seen before."*

*-Dr. Walter Willett, nutrition department chair, Harvard School of Public Health*

## SOARING ECONOMIC COSTS

*"About \$147 billion a year are spent directly related to obesity and the underlying health conditions related to that. That compares with all the cancers that people have across America, which cost a little under \$100 billion a year."*

*-Kathleen Sebelius, US Secretary of Health and Human Services*

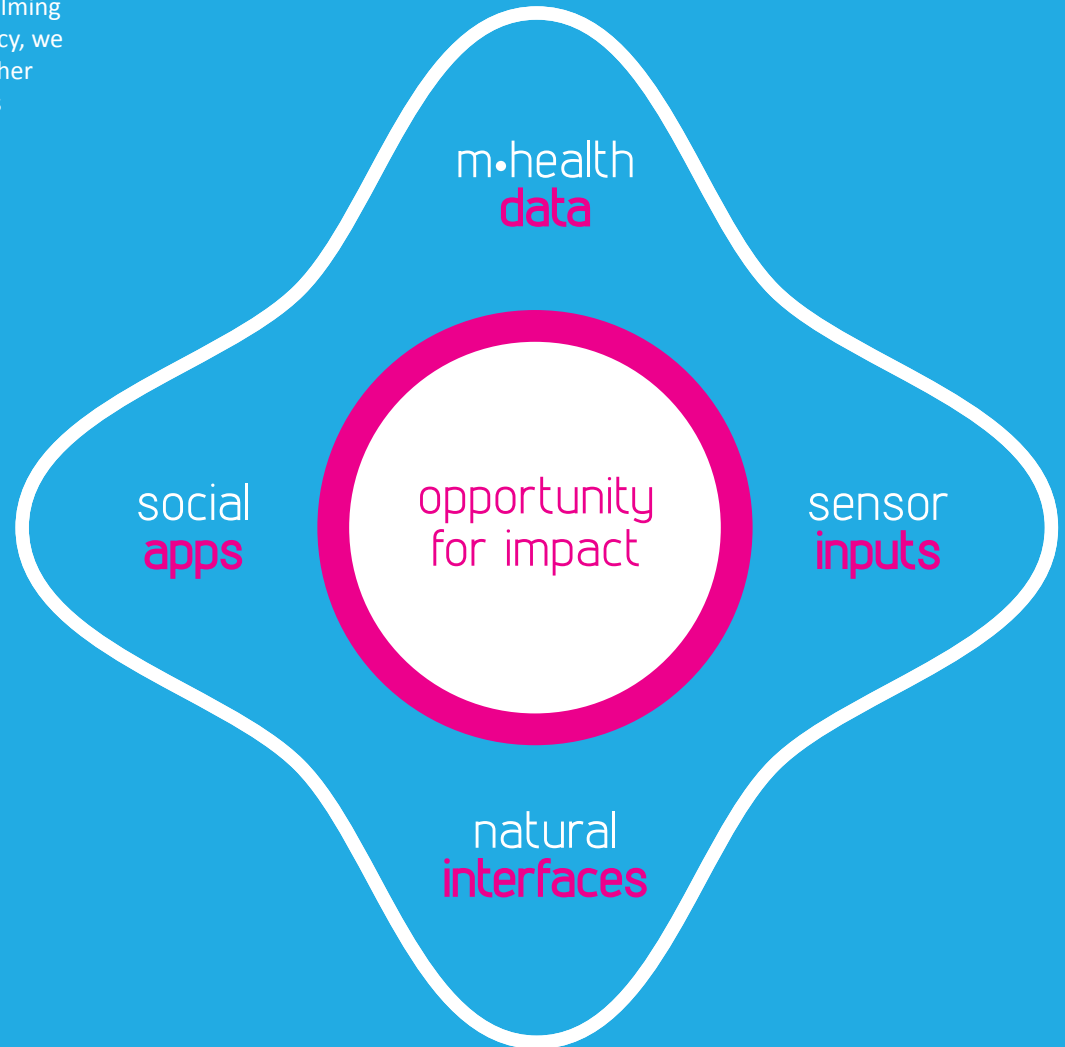
## REDUCED COMPETITIVENESS

*"Recent studies suggest half of Americans will be obese by 2030... It has an impact at every step along the way, on costs and on quality of life, on a productive workforce. We are really putting ourselves at a huge disadvantage in a global economy by having a nation that is vastly overweight."*

*-James R. Gavin III, M.D., Ph.D., chairman of the Partnership for a Healthy America's board of directors*

# OPPORTUNITY IN THE CONVERGENCE OF TRENDS

UPSTREAM sees the convergence of four trends that represent enormous opportunity for impact in this space, and growth for those who act. While each of the four is powerful on its own, when leveraged in concert they have the potential to empower companies to capture opportunities by confronting childhood obesity in exciting new ways. With the alignment of overwhelming human needs, growing awareness, and emerging changes in public policy, we believe the intersection of this issue and these technology trends together represent a huge landscape of growth opportunity for those companies innovative enough to embrace it.



# SENSOR INPUTS

Born from the proliferation of sensors that provide streams of input to track and understand our behaviors, movements and preferences, we are now crossing a threshold where the capabilities of ubiquitous computing are limited only by our imaginations.

These unprecedented capabilities to track information will be matched by the ability to coordinate and curate experiences. Just as self-analysis tools such as Fitbit and JawboneUP are allowing adult consumers manage their health, new apps and devices can provide engaging experiences to empower children to achieve fitness targets. The growing presence of Sensor Inputs will provide “data exhaust” from three sources that can be tracked and applied in useful ways:

**People:** Smartphones and a new breed of wearable products track biometric data

**Places:** Geo-aware smartphones provide patterns of data on the movements of crowds and individuals

**Things:** Connected home, smart cities and infrastructure self-report and share information

We have seen a myriad of health monitoring products introduced this year that measure a variety of health indicators including pulse rate, calorie burn rate, oxygen usage, movement, consumption and sleep patterns. Current examples of this trend are targeted at the general, adult consumer population. As these take root and mature it is easy to imagine how these and new brands could emerge to engage and benefit children. In the future, sensor-fied products will evolve away from the obvious first application as wearable devices that monitor basic body metrics. Some are beginning to monitor aspects of sleep and LumoBack can even monitor posture.

## Future implications for SENSOR INPUTS & childhood obesity:

*The living room could recognize a child and determine if they have been inactive for too long. The TV could send a text to a parent, or switch itself off and go into “exercise mode” for active play*

*Home security systems could monitor and encourage outdoor play, with lighting and sound systems that engage kids outside, and celebrate active play*

*Virtual communities can passively check in to active play locations like parks and playgrounds, promoting spontaneous, “pick-up” exercise games and helping kids make new friends with similar health goals*

*Smart kitchens could provide kids with location-based nutrition guidance, presenting the fruit drawer and discouraging the cookie jar*



Wiithings

blood pressure monitor



Nike

FuelBand fitness tracker



Nest

learning thermostat



LumoBack

posture monitoring system

# MOBILE HEALTH DATA

Demonstrating the cross category opportunity of this trend, companies as diverse as Qualcomm, AT&T, United Health Group, and Ford are all investing in the emerging area of mobile health, creating new partnerships and aggressively pursuing new categories such as bio-monitoring apparel, secure chat services with physicians, and in-car health monitoring.

In addition to leadership from these top corporations, new brands like Withings are emerging. Their Withings Health Cloud is a health and wellness cloud platform that integrates data from not only their own products but dozens of other fitness tracking apps and connected devices to provide innovative ways to help consumers track, share, and manage their health indicators.

The portability, management, and synthesis of this ecosystem of “Big Data” will be central to personal health management, providing useful information to enable parents, caregivers, and children themselves to make better lifestyle choices.

Made possible by data collection through SENSOR INPUTS, advanced personal metrics have become the next big thing. These individual data analytics can be leveraged to both raise awareness of obesity causing behaviors in children, and provide actionable feedback to encourage positive behaviors that improve children’s health.

## Future implications for MOBILE HEALTH DATA & childhood obesity:

*Big-data will uncover new patterns that will extend our scientific knowledge – such as patterns based on blood-type or customized treatment plans to match personal genomes*

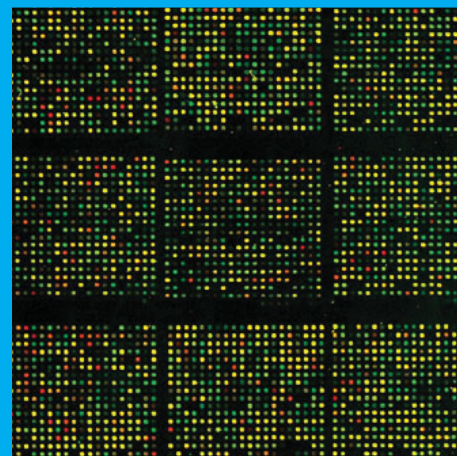
*Doctors can pre-empt disease with custom advice on preventive medicine and health promotion*

*Caregivers could get warnings when metrics are off track and attention is needed*

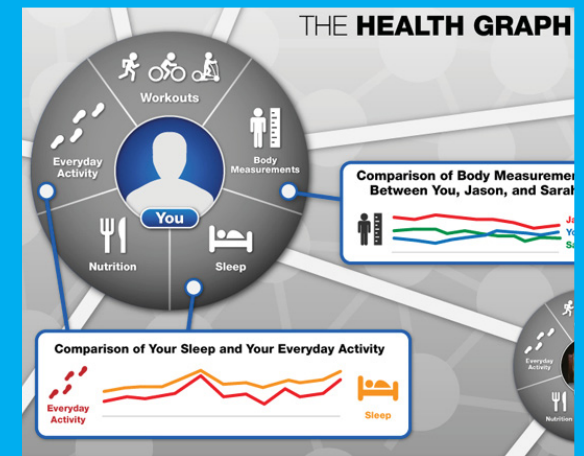
*Doctor access to “Time-lines” of metrics and specialist data will make diagnoses more holistic and accurate*



Ford InSync  
health monitoring system



23andMe  
personal genomic analysis



RunKeeper Health Graph  
health data aggregator

# NATURAL INTERFACES

Continued improvements towards natural and intuitive interfaces such as voice, gesture recognition, and eye-tracking control will make passive monitoring and active engagement ever easier – almost without thought. Control of technology and access to digital content will feel increasingly second nature. These new interfaces use movements and gestures to bridge the gaps between the physical and digital worlds.

As touchscreen, mobile sensing, and accelerometer innovations go mainstream, new opportunities emerge to engage broader segments of the populous, especially children. Gamification of health, enabled first by Wii Fit and now Microsoft Kinect, encourage healthy behaviors with natural interfaces and fun new ways to challenge and engage kids in active play.

Kinect's voice and motion control capabilities are already being embraced by the hacker community for a stunning variety of new applications, from gait analysis for rehabilitating stroke victims to the beatmixer that lets you convert body movements into sound. The opportunities to create fun, active experiences seem limitless.

## Future implications for NATURAL INTERFACES & childhood obesity:

*The bathroom of the future could track and communicate key health indicators and provide dietary feedback – passively collecting “time-lines” of data for the eco-system*

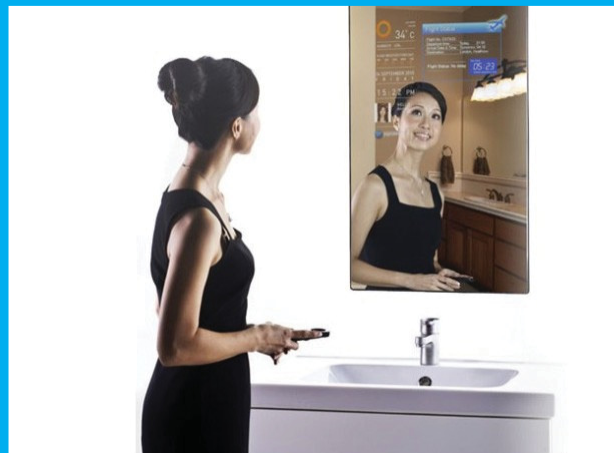
*Augmented reality and new gaming interfaces will make exercise less repetitive and more adventurous with novel experiences made possible by physical and mental engagement*

*Devices could sense body language, mental attitudes and body metrics during any type of exercise and intelligently adjust a workout program accordingly, providing a tailored experience based on the unique needs of children*



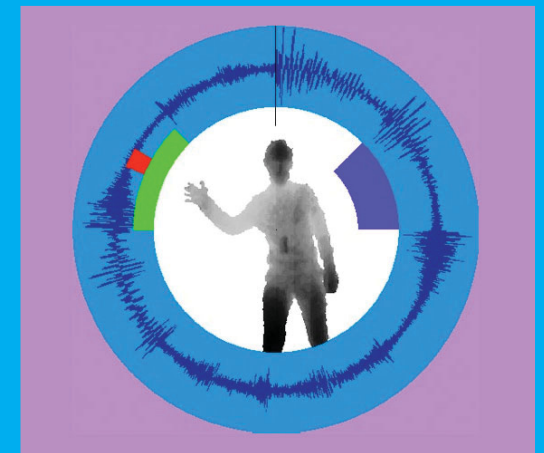
SoftKinetic

gesture recognition based interface



Cybertecture

interactive mirror



Kinect BeatWheel

motion controlled music interface

# SOCIAL APPS

Enabled by mobile “geo-awareness” technology, Social Apps are allowing us to build local and virtual communities around common goals like never before. New communities of supporters comprised of friends, family, like-minded peers and care-givers will help motivate and gamify the experience of making healthier choices. Innovative web apps such as Health Month are leading community supported behavior change in this way. Applications like these show great promise for new ways to help kids live healthier lifestyles and overcome social isolation that can coincide with sedentary lifestyles and stigma.

These technologies enable brands to offer new location and community-based value exchanges with consumers and marketers will be challenged to explore new types of social-interpersonal currency to help people to feel more connected and “valued in-the-moment.” Consumers in turn will reward brands by broadcasting data about their success stories.

As Nike has proven with Nike+, the Human Race, and now the Fuel Band (with its own fitness currency), the community becomes the “product”, and the product, service and brand communications ecosystem all work in concert to support that community. By providing parents and older children with new ways to connect with one another and build communities around healthy lifestyle behaviors, brands will be rewarded by the healthy communities they help build.

## Future implications for SOCIAL APPS & childhood obesity:

*Mobile device may reach object recognition capabilities to identify foods and provide real-time nutritional content to support better eating habits*

*Parents and kids can be notified when a friends is out playing nearby, facilitating play dates*

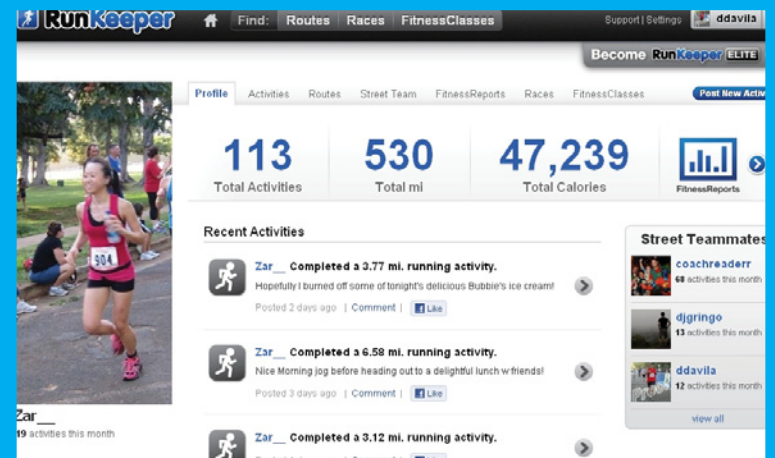
*Virtual communities can passively check in to active play locations like parks and playgrounds, promoting spontaneous, “pick-up” exercise games and helping kids make new friends with similar health goals*



GymPact  
exercise check-in app



PatientsLikeMe  
support community



RunKeeper  
online social fitness community

# CALL TO ACTION

We are seeking leaders from a few organizations, across categories, with the vision to embrace human needs as business opportunities. Who among you is up for the challenge of innovating towards a future without childhood obesity?

If you are interested in seizing this opportunity then call us at 512.234.3757

UPSTREAM is a brand innovation consultancy that helps leaders build customer inspired growth platforms and tools for driving innovation. By providing innovation frameworks, actionable insight, and structured co-creation, we bridge the gaps between technology, product design and marketing to spark innovation.

Our DNA consists of highly experienced designers, marketers, media technologists, researchers and brand strategists who apply world-class design thinking across silos to realize design vision.

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