

SAMSUNG

GLOBAL TRENDS REPORT 2011

VERSION: DIGITAL IMAGING

The Samsung logo, consisting of the word "SAMSUNG" in white, bold, sans-serif capital letters, centered within a dark blue, horizontally-oriented oval shape.

SAMSUNG

Product Innovation Team

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INTRODUCTION

INTRODUCTION

Samsung's rise as a dominant player in consumer electronics and home appliances is **directly linked to the company's ability to understand and capitalize on trends affecting its business.** Since 2009, PSFK has been employed by Samsung to help identify and articulate these trends; searching for weak signals of change and providing a framework within which Samsung can contemplate how to address these changes in the marketplace.

This document represents an ongoing effort to capture and report on the top global trends and market innovations that will directly impact the markets in which Samsung participates over the next five years.

The trends presented in the following pages were selected based on the opportunities they afford Samsung Electronics, with the ultimate objective of achieving a better understanding of:

- Core Consumer Benefits
- Evolution of Current Trends
- Implications for the Marketplace

The goal of this document is to inspire Samsung's business units by highlighting innovation taking place in product/service development and consumer experience design.

END OF THE YEAR REPORT

This end-of-year report presents the latest trends research findings and provides a holistic overview of the trends research performed over the past 12 months. In all, PIT presents 3 Macro trends, 15 Micro trends and 2 Emerging trends. Each trend is brought to life with best-in-class manifestations of change from around the world.

- How the trend has evolved from those that appear in previous reports
- The core consumer benefits each trend delivers to the consumer
- Implications for Samsung accompanied by a thought starter for product design and planning teams
- Relevant quotes from industry experts that support and illustrate the trend
- In the case of "emerging" trends, drivers have been identified that shine a light on the factors responsible for the emergence of the trend

PROCESS

MICRO TRENDS

A Micro Trend appears when a small, passionate group embrace a shared choice or idea. Characteristics of Micro Trends include:

Outdated Mainstream: Micro Trends are typically underrepresented in mainstream culture.

Growth Potential: With significant cultural support, a Micro Trend becomes a Macro Trend.

MACRO TRENDS

A Macro Trend is a shared choice or idea that achieves widespread popularity and shapes society over time. Characteristics of Macro Trends include:

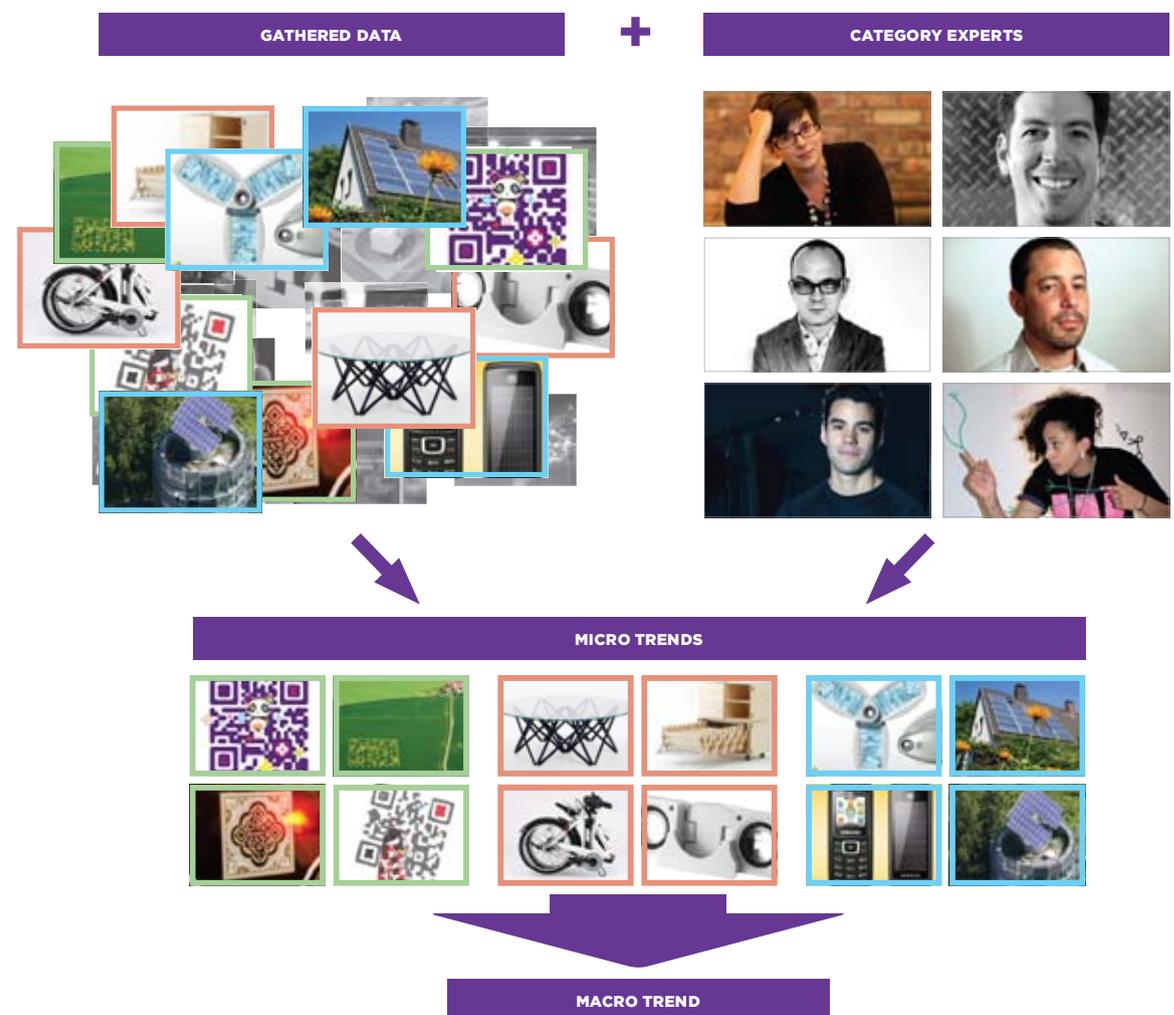
Societal Impact: Macro Trends shape and define societal changes.

Longevity: Macro Trends are influential for a long period of time.

HOW THE 2011 TRENDS WERE IDENTIFIED

Over the course of 12 months, a global team of researchers gathered data and opinions that tracked the evolution of trends identified through previous trends research and explored new areas of interest to Samsung.

Using a methodology called Grounded Theory Analysis, this data was systematically evaluated to identify clusters of emerging ideas. Clusters with several examples are defined as micro trends. Further study of these micro trends uncovered larger themes which are designated as macro trends.



2011 TRENDS



Widespread mobile connectivity and the rise of cloud-based services are enabling people to tap into unprecedented levels of processing power and storage capacity through their mobile phones and tablet computers, transforming these devices into universal tools for accomplishing virtually any task from collaborative work presentations to remote home monitoring. This added functionality and accessibility creates a better mobile experience that is capable of delivering greater efficiency, control and simplicity to people's anywhere lifestyles.



As social networks continue to grow in both popularity and diversity, they are taking on an expanded role in people's daily lives. From conversations around entertainment and recommendations on restaurants to advice on potential purchases and even the current status of home appliances, people are turning to social platforms to get real-time access to people, objects and information that matter most. Tools that enable people to easily tap into the right social channel depending on their current situation delivers a richer and more relevant context for enjoying any experience.



The development of sensor-based networks and more intelligent algorithms for making sense of data such as time, environmental conditions and user metrics, are providing people's electronics and appliances with a higher degree of autonomy and awareness. Based on the external and internal inputs being gathered, devices are able to make better decisions about their own performance and maintenance, and respond to their owners in a more intuitive way to complete tasks or suggest actions. These smarter and more personal interactions ensure that people feel that they are at the center of their tech-enabled world.

- REMOTE ENERGY CONTROL
- POINT AND SEARCH PHONE
- MOBILE CREATIVE SUITE
- ANYWHERE COLLABORATIVE WORKPLACE
- PROXIMITY SERVICES

- SOCIALLY ENABLED MACHINES
- SOCIAL STREAM AS ENTERTAINMENT
- SOCIAL RECOMMENDATIONS
- SOCIAL SHOPPING

- AUTONOMOUS SUPERVISION
- SENSORY RECOGNITION
- COMPLEMENTARY CONTENT GENERATION
- VIRTUAL INTERACTION
- REAL WORLD GAMING

KEY OPPORTUNITIES FOR DIGITAL IMAGING

Each micro trend within this document is accompanied by potential product design opportunities that are presented by the manifestations within. This page presents a selection of key opportunities found within the document.

Layered Information: Additional data could be sourced through the cloud and added to people's images.

Native Image Search: The phone's camera could react to the image in its viewer and provide additional information.

Sync'd Studio: Cameras could offer good-enough on-the-spot creative editing services.

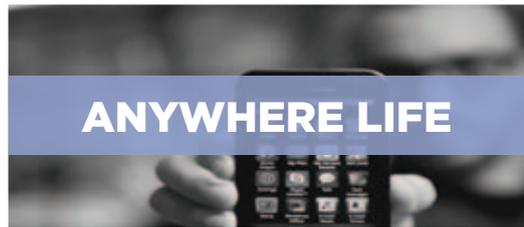
Projection Menus: Camera users could interact with projected menus to control the functions of their cameras.

Intuitive Tutorials: Cameras could monitor use and provide recommendations on better practices.

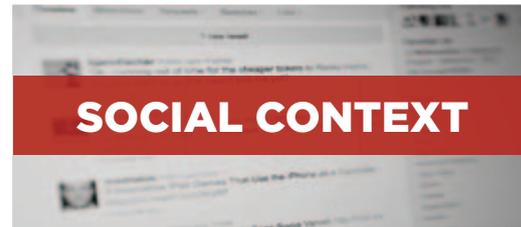
Energy Efficiency: Cameras could understand usage patterns and adapt power use to optimize energy longevity.

KEY DRIVERS AND EMERGING TRENDS

Each micro trend within this document is accompanied by potential product design opportunities that are presented by the manifestations within. This page presents a selection of key drivers found within the three macro trends.



- Developing cloud services that allow people to easily share media-rich content with one another.
- Emergence of the mobile as a person's central device, from which they can control many devices.
- Spread of GPS technology into more devices.
- Higher resolution cameras appearing on more mobile phones.



- People becoming more comfortable sharing their preferences with social networks.
- Shared service API's that transmit comments users are leaving in their social networks about entertainment they are watching.
- Spread of social media platforms for devices to deliver messages.
- Electronics capable of recording and storing more memory.



- People becoming more comfortable with technology tracking personal data.
- Spread of sensors across everyday electronics.
- Development of intelligent algorithms for interpreting behavioral data.
- Rising familiarity with gaming consoles that allow for simple forms of gesture and haptic feedback.

EMERGING TRENDS:

Two emerging trends appear within this document, pointing to manifestations of interest that have yet to develop into full trends.



As people become more accustomed to mobile lifestyles, they expect their devices to be more efficient with power management. In an effort to meet these competing requirements, more efficient technologies are being developed to offer users options to extend battery life without having to sacrifice on quality or performance.



Devices and software are being developed with functionality that specifically allows users to easily correct for mistakes. These take the form of predictive technology that is preemptively aware of potential common errors, but can also be more simple solutions for restoring conditions back to their original state.

INTRODUCTION

**GLOBAL TRENDS
REPORT 2011**

**BREAKDOWN OF MICRO TRENDS
BY PRODUCT CATEGORY**

| | | HOME APPLIANCES | DIGITAL IMAGING | HOME ENTERTAINMENT | MOBILE DEVICES | PERSONAL COMPUTING |
|------------------|----------------------------------|-----------------|-----------------|--------------------|----------------|--------------------|
| ANYWHERE LIFE | REMOTE ENERGY CONTROL | ● | | | ● | ● |
| | POINT AND SEARCH PHONE | | ● | | ● | ● |
| | MOBILE CREATIVE SUITE | | ● | ● | ● | ● |
| | ANYWHERE COLLABORATIVE WORKPLACE | | | | ● | |
| | PROXIMITY SERVICES | ● | ● | ● | ● | |
| SOCIAL CONTEXT | SOCIALLY ENABLED MACHINES | ● | | ● | ● | ● |
| | SOCIAL STREAM AS ENTERTAINMENT | | | ● | ● | |
| | SOCIAL RECOMMENDATIONS | | | ● | ● | ● |
| | SOCIAL SHOPPING | | | ● | ● | ● |
| SENSE-ABLE WORLD | AUTONOMOUS SUPERVISION | ● | | | ● | ● |
| | SENSORY RECOGNITION | ● | ● | | | ● |
| | COMPLEMENTARY CONTENT GENERATION | | | ● | ● | ● |
| | VIRTUAL INTERACTION | | ● | ● | ● | ● |
| | REAL WORLD GAMING | | ● | ● | ● | |
| | MOBILE ENERGY LONGEVITY | | ● | | ● | ● |
| | CTRL-Z ELECTRONICS | ● | ● | | ● | |

TREND GRAPH

The graph that appears here and alongside the individual trends is an adaptation of the Gartner Hypecycle (www.gartner.com/hypecycles). The Hype Cycle is a guide for understanding where a trend currently exists on its path towards mainstream adoption. This path is characterized by four stages described below, with each stage representing a degree of public visibility. At a trend's highest visibility, there is much speculation in the media about the trend and how it will potentially impact consumers.

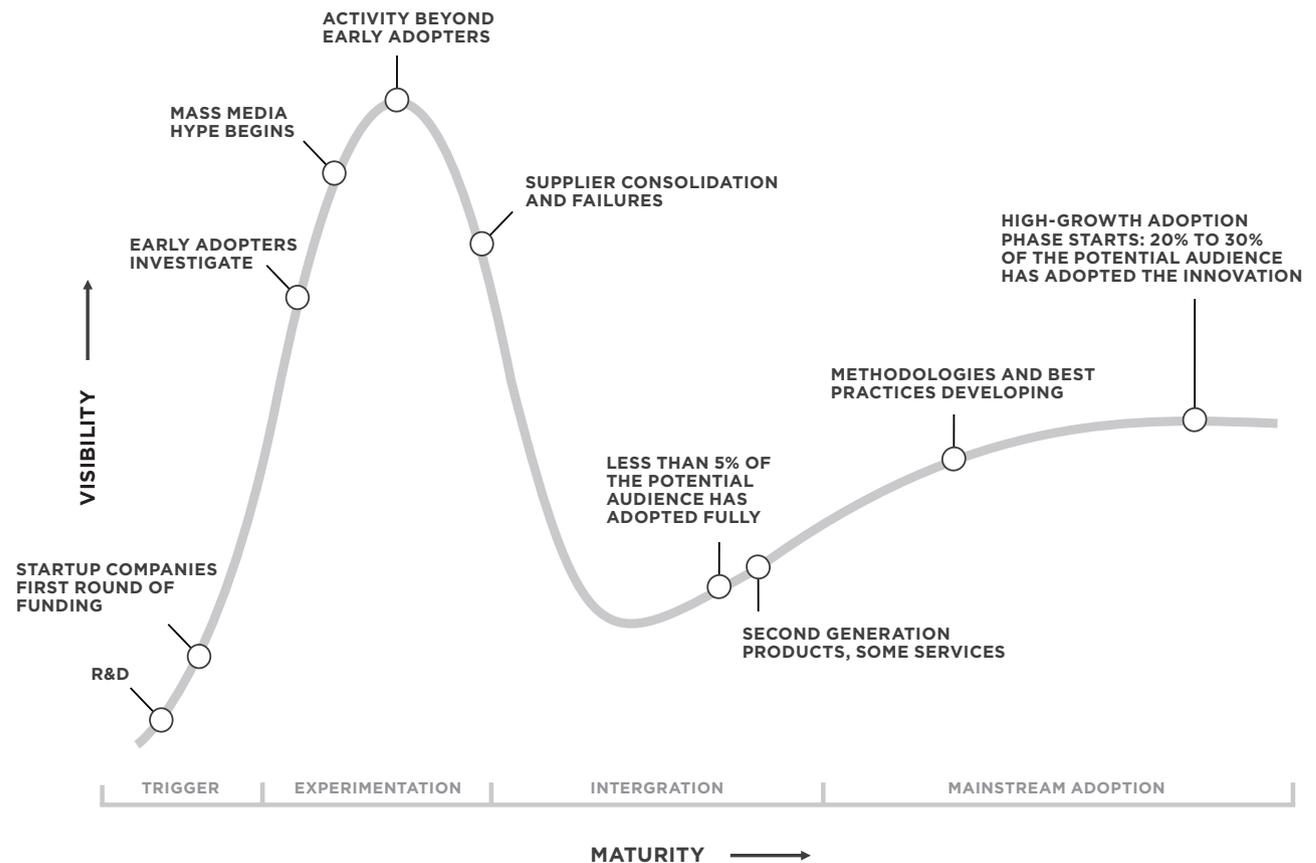
Trigger: A breakthrough, public demonstration, product launch or other event generates significant press and industry interest.

Experimentation: During this phase of overenthusiasm and unrealistic projections, a flurry of well-publicized activity by technology leaders results in some successes, but more failures, as the technology is pushed to its limits.

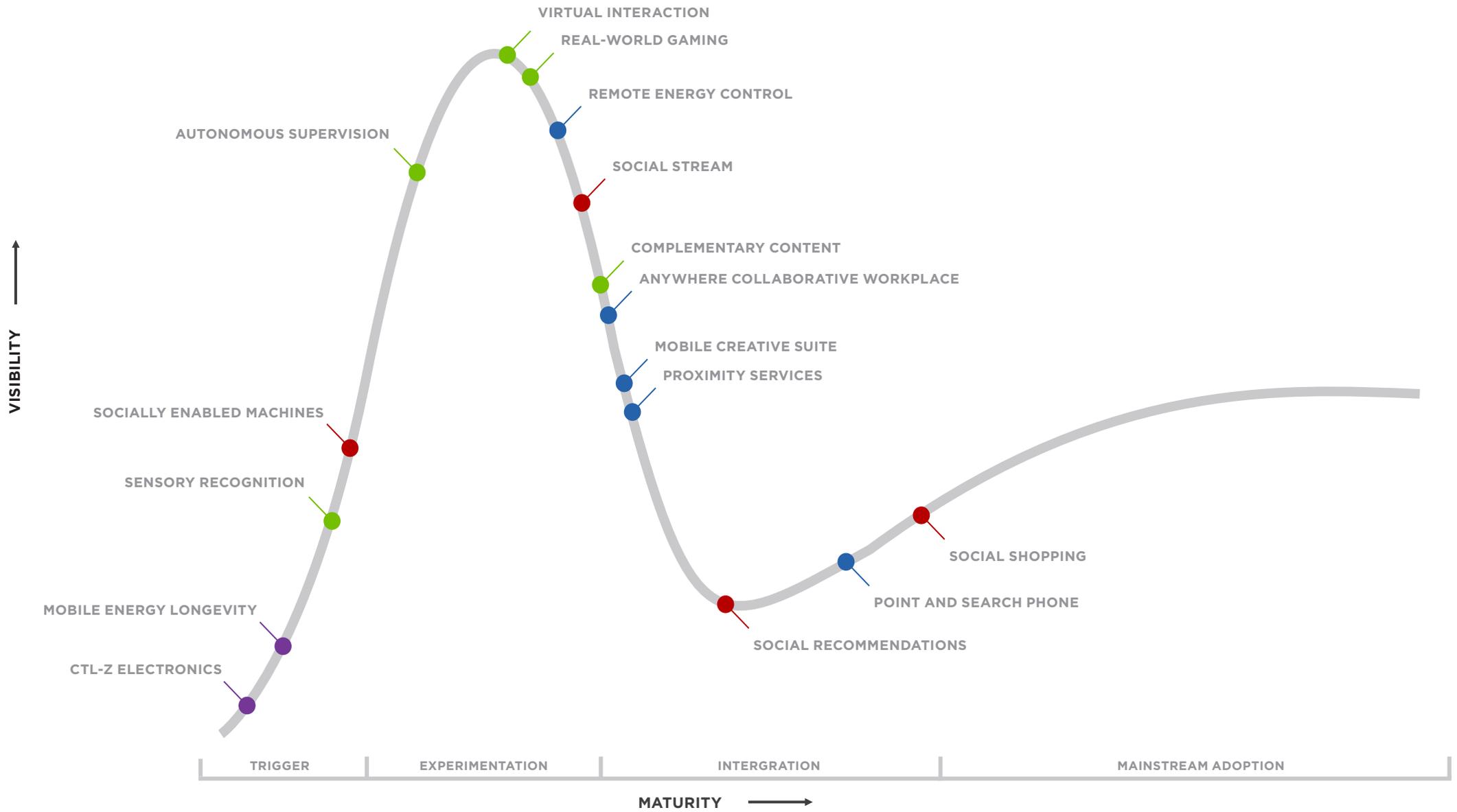
Integration: Focused experimentation and solid hard work by an increasingly diverse range of organizations lead to a true understanding of the technology's applicability, risks and benefits. Commercial off-the-shelf methodologies and tools ease the development process.

Mainstream Adoption: The real-world benefits of the technology are demonstrated and accepted. Tools and methodologies are increasingly stable as they enter their second and third generations. Growing numbers of organizations feel comfortable with the reduced level of risk; the rapid growth phase of adoption begins. Approximately 20% of the technology's target audience has adopted or is adopting the technology as it enters this phase.

On the following page, an overview is given that maps each micro trend within the report along this trend graph.



TREND GRAPH



ANYWHERE LIFE

Widespread mobile connectivity and the rise of cloud-based services are enabling people to tap into unprecedented levels of processing power and storage capacity through their mobile phones and tablet computers, transforming these devices into universal tools for accomplishing virtually any task from collaborative work presentations to remote home monitoring. This added functionality and accessibility creates a better mobile experience that is capable of delivering greater efficiency, control and simplicity to people's anywhere lifestyles.

| REMOTE ENERGY CONTROL | POINT-AND-SEARCH PHONE | MOBILE CREATIVE SUITE | ANYWHERE COLLABORATIVE WORKPLACE | PROXIMITY SERVICES |
|--|--|--|--|---|
| <p>Connectivity through the cloud has evolved to the point where users can not only monitor, but control their home appliances from any location through a mobile phone or tablet device. Systems are now being designed that allow for enhanced remote power management for the home.</p> | <p>Advances in image recognition and augmented reality are enabling consumers to simply point their cameras at objects, landmarks and individuals in the physical world to look up information and context about the things around them.</p> | <p>Robust applications are allowing users to create high-quality content on mobile phone and tablet devices. Add-on peripherals designed for mobile devices are being attached to electronics, turning phones and tablets into portable production studios. With rapidly developing cloud connectivity, content creators can share and broadcast entertainment in innovative ways.</p> | <p>As workers rely more and more on their mobile phones and tablet computers to perform tasks from any location, the traditional workplace is transforming into a more mobile environment. As a result, services and applications are being developed to create virtual office environments online and enable remote collaboration between workers, maintaining efficiency and transparency of workflow.</p> | <p>As people become more comfortable with sharing their location and as more electronics are designed with GPS capabilities, services can now trigger relevant notifications or actions as users cross into predetermined areas or are within proximity to a specified person or object. These services often take the shape of timely information delivered directly to the individual, but can also trigger events remotely as a user moves between places or approaches a destination.</p> |



ANYWHERE LIFE

POINT AND SEARCH PHONE

Advances in image recognition and augmented reality are enabling consumers to simply point their cameras at objects, landmarks and individuals in the physical world to look up information and context about the things around them.

ANYWHERE LIFE

POINT AND
SEARCH PHONE

People can use the world around them as an input into a search engine, gathering information just by pointing their phones.

OPPORTUNITIES

LAYERED INFORMATION:

Connected digital cameras should instantly provide a layer of context to people's photographs, including an index of information about what the user is photographing.

NATIVE IMAGE SEARCH:

Mobile Phones can come with a pre-installed, native app that enables people to use their phone's camera to quickly access information about the physical world. This could also be an option built into the phone's camera software.

CONSUMER BENEFITS

I CAN SEARCH WITH EASE:

It's much easier to point my phone at an object and snap a picture than opening a mobile browser to search and find information.

I HAVE MORE INFORMATION ABOUT PLACES I VISIT:

Having a faster way to access information about my surroundings makes every one of my trips more enjoyable, whether around the corner or across the world.

MY PHONE LASTS LONGER:

I can spend less time digging through a web browser while draining my battery.

DRIVERS

- Image recognition systems becoming more advanced.
- More databases being built that connect visual data to actual objects.
- Evolution of augmented reality platforms that deliver more useful information.
- Higher resolution cameras appearing on more mobile phones.

IMPACTED GBMS

Mobile Devices, IT Personal Computing, Digital Imaging

TREND EVOLUTION

Advanced video and image recognition systems are turning pieces of the physical world into items that are as easily searchable as text. The phone is becoming the platform through which the real world can be quickly translated into the digital.

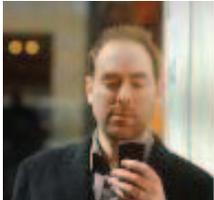


ANYWHERE LIFE

POINT AND
SEARCH PHONE

Advances in image recognition and augmented reality are enabling consumers to simply point their cameras at objects, landmarks and individuals in the physical world to look up information and context about the things around them.

INDUSTRY INSIGHTS



“It makes sense to use your camera to figure out what’s around you, because you don’t have to type in a search and you don’t have to decide how to word it. All the information is easily provided. These kinds of intuitive technologies help make things easier, fun and interactive for people.”

Sam Feuer

Mobile Navigation Expert
CEO, Fastmall



“For many search queries, using an image to search is easier and more useful than text alone, especially on a mobile phone.”

Shailesh Nalawadi

Product Development, Google



“People are already using internet searching as an adjunct to their own memory. For example, I have a hunch about something, need facts to support, and my phone comes through for me. Sometimes, I see I’m wrong, and I appreciate finding that out before I open my mouth.”

Craig Newmark

Founder of Craigslist

400%

Percentage of growth of U.S. consumers using Android phones between the first quarter and second quarter of 2010.

Bango, 2010

96%

Percentage of people who use the Google search engine on the iPhone.

Search Engine Land, 2010

KEY MANIFESTATIONS



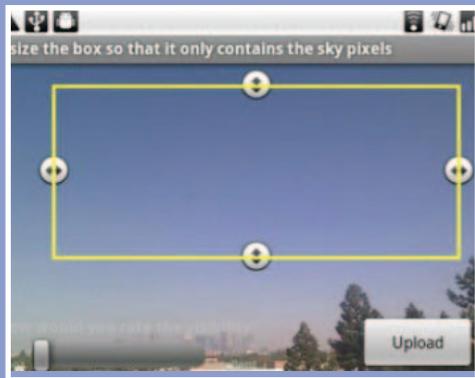
IMAGE RECOGNITION HELPS YOU MASTER WINE SELECTION

U.S. based Snooth Wine Pro is a mobile app that gives users image-based wine searching, allowing them to scan wine labels to learn more about or purchase a particular wine of interest. The image recognition technology is powered by a reverse-image search engine that matches wine labels to a special database, tailored specifically to adjust for the curvature of wine bottles and common wine contexts. www.snooth.com/iphone-app



APP KNOWS PLANE ORIGIN AND DESTINATION

The Plane Finder augmented reality application designed by English designer Pinkfoot Limited gives users the opportunity to identify a plane and its flightpath using only their cell phone camera. The app mimics a virtual radar with the iPhone to visually list flight number, aircraft registration, speed, altitude and distance from a user's location. www.my.pinkfoot.com



CAMERA DETECTS AIR POLLUTION

The Robotic Embedded Systems Lab at the University of Southern California has developed a phone app that is able to recognize air quality based on mobile snapshots. When a photo is taken of the sky, the image is uploaded to a database that analyzes the image along with time, location, and lighting details sent from the phone. The system then returns a message detailing the environmental levels at that location. www.robotics.usc.edu



AR APP UNDERSTANDS LANDSCAPE FEATURES

Marmota is a prototype mobile AR device being tested by the Technologies Of Vision Unit in Italy for better outdoor topography. When a traveller needs information that will help them maintain their route, the mobile AR can search the names of mountain peaks, their elevation, and how far away they are. <http://tev.fbk.eu>



AUGMENTED REALITY BASED ON ADVANCED VIDEO RECOGNITION

American wireless telecommunications company Qualcomm has developed an augmented reality platform for developers that is based entirely on real-time video recognition allowing for more individual objects to be interpreted and looked up by aiming a device at them, instead of this functionality being limited to locations or objects that are specially coded. www.qualcomm.com



LOCATE NEARBY TOURIST ATTRACTIONS WHILE OFFLINE

Developed in Canada, MTrip is an application for leisure travelers that allows users to select attractions and restaurants within cities, using these selections to craft a personalized itinerary within the app. Users can then hold up the phone to search their nearby destinations while in offline mode for use in foreign data networks. www.mtrip.com



ANYWHERE LIFE

MOBILE CREATIVE SUITE

Robust applications are allowing users to create high-quality content on mobile phone and tablet devices. Add-on peripherals designed for mobile devices are being attached to electronics, turning phones and tablets into portable production studios. With rapidly developing cloud connectivity, content creators can share and broadcast entertainment in innovative ways.

ANYWHERE LIFE

MOBILE
CREATIVE SUITE

With advanced mobile add-ons, services, and peripherals, individuals can now create high-quality content using powerful mobile devices.

OPPORTUNITIES

PACKAGED PERIPHERALS:

Samsung can consider developing a suite of hardware peripherals - headphones, steadicams and better lenses - that provide additional utility and/or quality to creative tasks performed on mobile phones and tablet computers.

CLOUD SERVICES:

In an effort to augment the storage capacities available on its tablets and mobile handsets, Samsung can offer cloud services to provide overflow for bigger files.

LIVE SHARING:

To enhance the all-in-one nature of what can be created on mobile devices, Samsung can build in features that enable live sharing - audio and/or visual - in front of audiences.

SYNC'D STUDIOS:

Whether wirelessly or through simple plug and play options, Samsung can add greater functionality to its mobile devices by enabling them to be easily synced to other electronics such as personal computers to accomplish more complex tasks.

CONSUMER BENEFITS

I CAN DEVELOP NEW SKILLS:

I can now craft creative content more easily than ever, using applications and tools that are intuitive to me.

I CAN WORK OUT-OF-HOME:

My professional production doesn't have to come to a halt just because I am not in front of my home computer.

IT'S EASY TO SHARE MY WORK:

Friends and fans are a part of my cloud, so I can easily distribute content to them.

DRIVERS

- Use of the mobile as a person's central device that can connect everything else.
- Developing cloud services that allow people to easily share media-rich content with one another.
- App developers creating music and video applications that allow people to create content in novel ways.
- Emergence of mobile devices with video streaming capabilities.

IMPACTED GBMS

Mobile Devices, Personal Computing, Digital Imaging, Home Entertainment

TREND EVOLUTION

With the raw power of mobile phones and tablets has been increasing alongside developments in wireless and cloud computing. People are more able to create compelling content entirely while mobile, sharing ideas on how to add apps and lightweight peripherals to simulate traditional studio equipment.



ANYWHERE LIFE

MOBILE
CREATIVE SUITE

Robust applications are allowing users to create high-quality content on mobile phone and tablet devices. Add-on peripherals designed for mobile devices are being attached to electronics, turning phones and tablets into portable production studios. With rapidly developing cloud connectivity, content creators can share and broadcast entertainment in innovative ways.

INDUSTRY INSIGHTS



“Traditionally you would spend a lot of time on production and rely on someone else to do dissemination, like a studio or a label. For an independent producer, this technology is incredible, because you can eliminate expensive processes and go straight to getting your work up.”

Michael Koerbel

Mobile Production Expert
Founder, Majik Pictures



“It’s never been possible before, but we’re already now seeing a lot of content creation on the iPhone and iPad. In the next year or two we’ll see even faster progression.”

David Lowe

Mobile Applications Expert
CEO, Cloudburst Research



“The Magic Piano app for the iPad lets users quickly play tunes and because of this, it has roughly three times its engagement over our other biggest hits.”

Jeff Smith

CEO, Smule Sonic Applications

60%

Percentage of American 18-29 year olds who use mobile devices to record video.

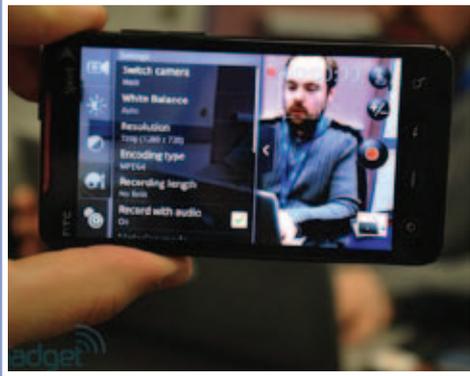
[Pew Internet, 2010 Mobile Access Study](#)

16-20%

Percentage of U.S. Consumers that are sharing their camera phone photos. They are printing to share at half that rate, or 8-10%.

[InfoTrends, 2010](#)

KEY MANIFESTATIONS



VIDEO EDITING PHONE

Taiwan-based smartphone manufacturer HTC's Sense is a new Android-based phone that boasts a focus on high-quality video capabilities. The phone includes the ability to record high-definition videos as well as editing software comparable to desktop-based applications.

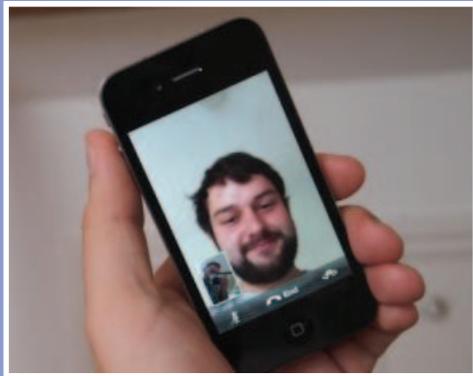
www.htc.com



INTELLIGENT SOFTWARE FOR INSTANT PROFESSIONAL DJ SETS

American DJ tech firm Numark has released an iPad application that allows for instant, continuous mixes built from music stored on a user's tablet. The software automatically detects rhythms, keys, and other acoustic qualities, allowing people to effortlessly arrange a professional set.

www.numark.com



LIVE VIDEO STREAMING ACROSS PLATFORMS

U.S. company Knocking Video has launched a new version of its video-recording app with the release of Apple's iOS 4. Without being restrained by phone type, users can connect to any video-capable phone in the network and request to start streaming video.

www.knockinglive.com



LIVE IMPROMPTU MUSIC ON THE IPAD

Based in England, Seline HD is a music-creation app available on the iPad that allows users to quickly create self-generated melodies. The developer's CrystalClarity HD sound engine analyzes and predicts melodies, co-creating simultaneously with the user to produce high-quality recordings in minutes.

www.amidio.com/seline



TABLET INTEGRATION WITH PHOTOSHOP

Adobe has demonstrated a prototype system for working within Photoshop using Galaxy Tabs and iPads as a companion interface. The secondary tablet houses many of the commonly-used tools for easy access while also allowing for independent image editing.

www.adobe.com



SNAP-ON MICROPHONE FOR IPOD

California-based Mikey 2.0 is a plug-in microphone peripheral for iPhone and iPod devices that widens the range of volume and pitch that the mobile can capture. The device includes a line-in for external recording, and a matching app that makes it easy for people to work with the higher-quality audio.

www.bluemic.com/micforipod



ANYWHERE LIFE

PROXIMITY SERVICES

As people become more comfortable with sharing their location and as more electronics are designed with GPS capabilities, services can now trigger relevant notifications and actions as users cross into predetermined areas or are within proximity to a specified person or object. These services often take the shape of timely information delivered directly to the individual, but can also trigger events remotely as a user moves between places or approaches a destination.

ANYWHERE LIFE

PROXIMITY SERVICES

People can receive services while outside of the home related to their location.

OPPORTUNITIES

UN-LOSE-ABLE TECH:

Portable electronics such as cameras and MP3 players can be synced with a person's mobile phone, triggering them when the device has potentially been left behind.

CONTEXTUAL SCREENS:

The home screens on cameras can adapt their settings to display specific features as a person moves between home, work and play.

CONSUMER BENEFITS

I'M MORE EFFICIENT:

Since my devices know where I am, they only alert me when it's necessary.

I GET TIMELY INFORMATION:

I don't have to remember all of my daily tasks, because my phone reminds me as I move from place-to-place.

I'M IN CONTROL OF MY INFORMATION:

I can limit the spread of my personal data to remain within a certain distance.

I'M MORE CONNECTED TO MY COMMUNITY:

I can be more in the know with local events and more able to support the livelihood of my neighborhood.

DRIVERS

- Growth in popularity of the check-in and user-shared data.
- Multitasking mobile operating systems that allow information to be collected and delivered in the background.
- GPS technology being integrated into more devices.

IMPACTED GBMS

Mobile Devices, Home Appliances, Digital Imaging

TREND EVOLUTION

The spread of GPS into more devices has made location tracking as simple as checking in. This is now happening automatically, with devices requiring less active user input to collect useful information about location.



ANYWHERE LIFE

PROXIMITY SERVICES

As people become more comfortable with sharing their location and as more electronics are designed with GPS capabilities, services can now trigger relevant notifications or actions as users cross into predetermined areas or are within proximity to a specified person or object. These services often take the shape of timely information delivered directly to the individual, but can also trigger events remotely as a user moves between places or approaches a destination.

INDUSTRY INSIGHTS



“It’s surprising that more people have not developed applications utilizing a phone’s calendar, because a calendar is a place that a lot of people live their lives in. Combine that with your GPS-aware phone, which is now tracking your location and where you’re going. We are now able to write complex rules and reminders for your phone, based on the combination of these two applications.”

Steven Dean

Data Tracking Expert
N.Y. Organizer, Quantified Self



“Applications that run in the background and alert users with a coupon or special offer as they walk by a store have been something of a holy grail for the mobile phone. Now we are starting to see them actually work.”

Jenna Wortham

Reporter, New York Times



“Geofencing gives marketers an easy way to target all customers provided they opt-in. Relevance is going to be the key; users want to feel like they’re taking advantage of a deal, but they don’t like being spammed or stalked.”

Ryan Kim

Contributing Editor, GigaOm



“For now, you’ll risk draining your battery for the convenience of running location apps in the background, but application developers will work to better optimize the experience in apps. As applications become better optimized for geolocation purposes, look for these automatic behaviors to become more sophisticated in function.”

Jennifer Van Grove

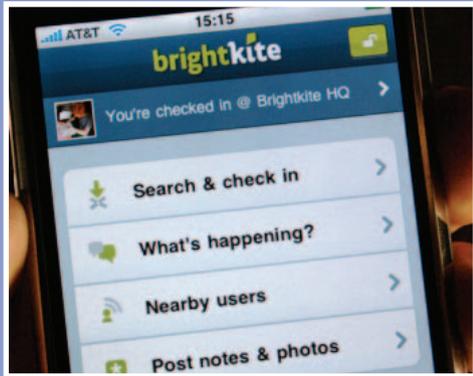
Contributing Editor, Mashable

4M

Number of Foursquare users in Sept 2010, up from 80,000 in Sept 2009.

Foursquare CEO Dennis Crowley

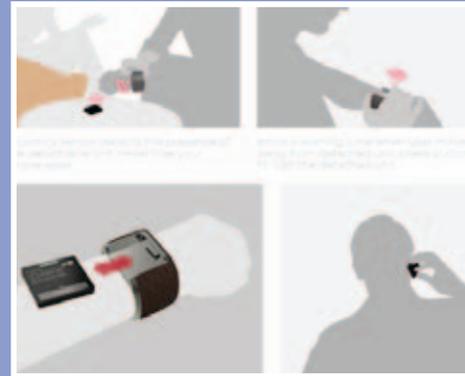
KEY MANIFESTATIONS



IPHONE APP ADDS NOTIFICATIONS BY FRIEND'S PROXIMITY

Headquartered in the U.S., The mobile service Brightkite helps users keep track of their friends through location check-ins. Brightkite makes these notifications more relevant by delivering alerts only when a contact is within a certain predetermined distance.

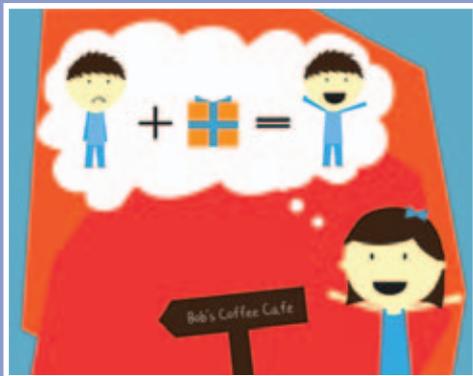
www.fuzebox.com



WATCH/PHONE COMBINATION WITH PROXIMITY AWARENESS

California based Designer Johan Loekito has developed the Proxima phone concept, a small mobile device which slides into a wristband that can be worn at all times. The phone is location-aware, so alerts the wearer when too far away from its wristband, prompting the user to locate the device.

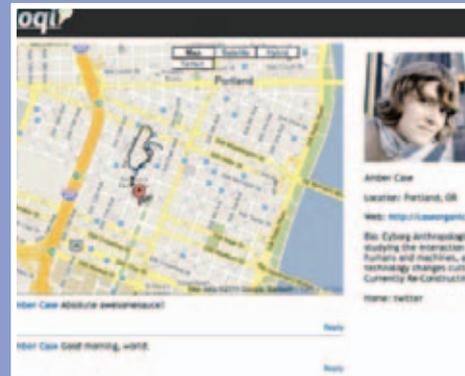
www.behance.net/jloekito



LEAVE MONEY TO BE FOUND AT LOCATIONS

Founded on U.S. company application Venmo, the mobile application Gifi is a combination of Foursquare and the text-message based transaction service Venmo. Through Gifi individuals are able to arrange for a friend to receive a monetary gift that appears when the friend checks in to a predetermined location.

www.givegifi.com



PRIVATE REALTIME PLATFORM FOR SHARING LOCATION DATA

U.S. company Geoloqi is a mobile platform for sharing location data. With this system, users can create scripts that automatically notify friends via SMS when approaching a meeting spot, check in to locations after a determined set of time, or deliver messages to others when late that calculate the distance away and how long to expect.

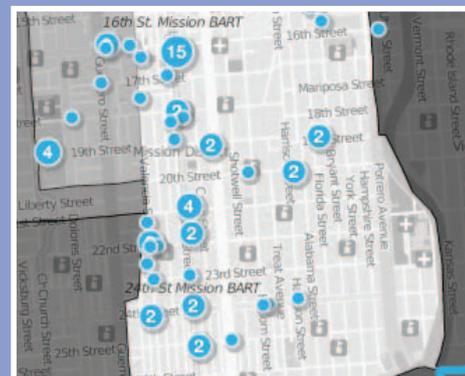
www.geoloqi.com



A GEO-FENCED MOBILE PROMOTIONS SERVICE

San-Francisco-based company Placecast introduces the ShopAlerts service - a platform that allows retailers and other businesses to send location-triggered mobile text messages to consumers who've opted in to receive them. When a customer is within range of a store based on neighborhood-level cell tower data, an alert is sent out to their phone with relevant incentives.

www.placecast.net/shopalerts.html



CHECK-IN AS NEWS-LIKE BAROMETER FOR POPULAR LOCATIONS

U.S. based Foursquare is developing web-based bookmarklets that allow users to easily add a venue to their foursquare account when they run across interesting locations while online. As these are aggregated, they become news-like indicators of the popularity of any given location.

www.foursquare.com

SENSE-ABLE WORLD

The development of sensor-based networks and more intelligent algorithms for making sense of data such as time, environmental conditions and user metrics are providing people's electronics and appliances with a higher degree of autonomy and awareness. Based on the external and internal inputs being gathered, devices are able to make better decisions about their own performance and maintenance, and respond to their owners in a more intuitive way to complete tasks or suggest actions. These smarter and more personal interactions ensure that people feel that they are at the center of their tech-enabled world.

AUTONOMOUS

SUPERVISION

Home systems and appliances are able to take advantage of sensor technologies to recognize environmental conditions and contexts, switching on-the-fly to optimal settings. Designers are creating electronics with the ability to make intelligent decisions about temperature, lighting, and energy usage, so that they react autonomously and make adjustments in real-time.

SENSORY

RECOGNITION

Intelligent devices have begun to listen for user habits by remaining aware of contextual cues, and are now responding to individuals on a more intimate level. Designers and engineers are now experimenting with better methods to adapt their products to individual personalities giving faster and more personal feedback.

COMPLEMENTARY

CONTENT GENERATION

Mobile applications are bringing a new dimension to people's viewing experience both on televisions and at live events by allowing related content to be delivered through multiple channels. This can deliver more information to the consumer in the form of additional video and stats, enhancing what people are watching in real-time. Through these platforms, people are becoming more active participants in both the consumption and production of content.

VIRTUAL

INTERACTIONS

Through a combination of projection devices, 3D technology and intelligent gestural control, designers are creating immersive experiences that allow for interaction with and manipulation of virtual objects. By extending content beyond the confines of a flat screen, this technology is making new forms of viewing and interaction possible.

REALWORLD

VIDEO GAMING

Designers are building platforms that turn everyday activities into game-like interfaces. With the ability to now recognize and track more kinds of user inputs, these systems represent data in ways that allow individuals to playfully interact with environments, often while accomplishing some other task at the same time.



SENSE-ABLE WORLD

SENSORY RECOGNITION

Intelligent devices have begun to listen for user habits by remaining aware of contextual cues, and are now responding to individuals on a more intimate level. Designers and engineers are now experimenting with better methods to adapt their products to individual personalities giving faster and more personal feedback.

SENSE-ABLE WORLD

SENSORY RECOGNITION

Consumers are demanding that their electronics to recognize them and react with appropriate functionality or information.

OPPORTUNITIES

SYNC'D PROFILES:

Home electronics should accommodate personal usage profiles that sync seamlessly between electronics, so that people don't need to continually adjust settings. Samsung electronics should foster a personal connection with their owners by constantly updating settings and interfaces based on usage.

INSTANT SETTINGS:

Handheld devices should be able to recognize their users through physical recognition and biometrics, and adjust settings accordingly.

TAILORED CONTENT:

Any of Samsung's electronics can use basic image recognition to determine approximate age of an individual user. Based on this information, it can pre-select certain settings, suggest or block access to specific types of content, or implement stricter restriction protocols.

CONSUMER BENEFITS

MY PURCHASES ARE MORE MEANINGFUL:

Individual devices last longer because they become tailored for me over time.

MY PHONE KNOWS MORE ABOUT ME NOW THAN WHEN I BOUGHT IT:

The content and functionality becomes more personalized for me each day.

I APPRECIATE THE RECOMMENDATIONS MADE BY MY ELECTRONIC DEVICES:

I'm receptive to feedback from my devices without feeling violated by intrusiveness.

DRIVERS

- Availability of sensors that are cheap and can be spread ubiquitously.
- Development of intelligent algorithms for interpreting behavioral data.
- People becoming more comfortable with technology tracking personal data.

IMPACTED GBMS

Mobile Devices, Digital Imaging, Home Appliances, Home Entertainment

TREND EVOLUTION

Image recognition systems are becoming more able to accurately identify real-world objects quickly, now including not only individual faces but unique movement patterns as well. This data has been used to predict future needs based on usage of personal devices; now devices are able to recognize and switch between separate users.



SENSE-ABLE WORLD

SENSORY
RECOGNITION

Intelligent devices have begun to listen for user habits by remaining aware of contextual cues, and are now responding to individuals on a more intimate level. Designers and engineers are now experimenting with better methods to adapt their products to individual personalities giving faster and more personal feedback.

INDUSTRY INSIGHTS



“What people are starting to realize is just how much a device can know about you and what you want to do with it simply by the way you grab it.”

Santiago Alfaro

Object-Based Media Expert
MIT



“A good idea to help older users who have a difficult time navigating contact menus on their phone is allow them to just hold it to a household photograph of the person they want to call, and have the phone recognize the face. It’s a way of going around the address book with just one button, helping the older user to use the phone accurately.”

Santiago Alfaro

Object-Based Media Expert
MIT

40%

Percentage of U.S. consumers who would be willing to pay a monthly subscription to have health data such as heart rate, blood pressure and weight sent automatically to their doctors.

Price Waterhouse Coopers, 2010

KEY MANIFESTATIONS



REMOTE RECOGNIZES USERS BASED ON MOVEMENTS

Intel is developing a remote control in LA that can recognize who is using it based on movements, and how they hold the device. Taking accelerometer readings every 100 nanoseconds, the phone is able to build a data set of idiosyncrasies about individual users, which is then applied to customized settings each time a particular user picks up the remote.

www.intel.com



CONTEXT-AWARE SMARTPHONE SENSES YOUR MOOD

Intel is working to develop phones that combine contextual data from all methods of input to capture personal user databases onto smartphones. As the phone learns about its user through data that is analyzed into basic habits, the phone begins to understand more complex behaviors that can be translated as reflective of the users' mood - intelligently designed software can then trigger recommendations or other functions appropriately.

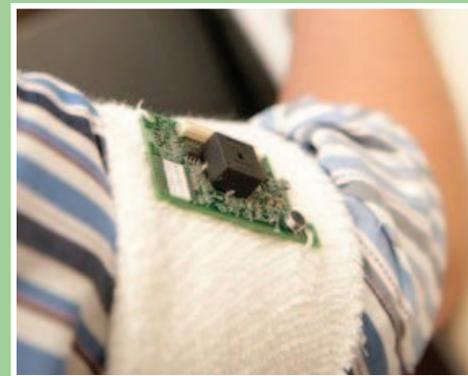
www.intel.com



COFFEE MACHINE RECOGNIZES USERS TO BREW THE PERFECT COFFEE

The Xelsis Digital ID coffee machine from Belgium uses a fingerprint scanner to identify individual users as they operate the machine. By recognizing the person making the coffee, the machine can automatically adjust custom settings based on the user's profile.

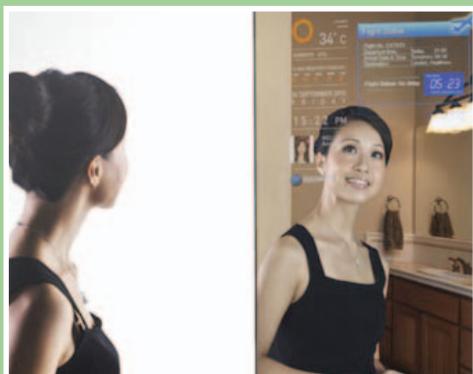
www.saeco.be



MOTION-SENSITIVE DEVICES DETECT DIFFERENT TYPES OF ACTIVITY

Researchers from Michigan State University's Department of Kinesiology are developing advanced wearable sensors that monitor complex relationships between limbs and activities, capturing data on tilt, posture and the proximity of body parts to each other. This allows them to detect distinct types of activity, and more accurately measure the energy expended on them.

www.educ.msu.edu/kin



REACTIVE MIRROR SYNCs TO GIVE PERSONALIZED HEALTH INFORMATION

The Cyberecture Mirror is a wifi-enabled bathroom fixture hailing from Hong Kong that connects a recognition system with a cloud based digital profile so it can relate contextual information to the viewer. In addition to being able to detect exercises a person is performing, the mirror syncs with a health-tracking web app to provide a heads-up display of personalized information.

www.cybertecturemirror.com/main.php



BIOMETRIC VENDING MACHINES RECOMMEND DRINKS BY INDIVIDUAL

A few thousand vending machines have been deployed in Japan that uses cameras to identify the gender and age of approaching individuals. Based on both, this individual data and its awareness of the current weather, the machine recommends a particular drink suitable for the present conditions.

www.u-tokyo.ac.jp

Through a combination of projection devices, 3D technology and control, designers are creating immersive experiences that allow for manipulation of virtual objects. By extending content beyond the computer screen, this technology is making new forms of viewing and

VIRTUAL IN



Users are able to more naturally interact with virtual interfaces.

OPPORTUNITIES

3D MANIPULATION:

Monitors and devices that allow for users to interact with 3D content should include interface devices that allow for manipulation in 3D space.

PROJECTION MENUS:

Navigation menus for settings on electronics and appliances can be delivered by projection displays.

HAPTIC FEEDBACK:

Projection and 3D displays should incorporate haptic feedback to help users more intuitively interact with intangible interfaces.

CONSUMER BENEFITS

NEW CONTENT IS MORE COMPELLING:

An added layer of interaction to 3D content means I can play with it and explore, instead of just look at it.

I CAN NAVIGATE MENUS WITHOUT DEVOTING MY FULL ATTENTION:

My menu guide me with vibrations and physical indicators when I am at key points in the navigation.

I CAN PICK UP COMPLICATED NEW DEVICES MORE EASILY:

Combining gesture with projection is an intuitive way for me to interact with new kinds of content and interfaces.

DRIVERS

- Rising familiarity with gaming consoles that allow for simple forms of gesture and haptic feedback.
- Spread of 3D content and hardware.
- Projection technology being implanted into more electronics.
- Emergence of augmented reality interfaces that overlay information.
- Tactile feedback interfaces for relaying kinesthetic sensations.

IMPACTED GBMS

Mobile Devices, Personal Computing, Home Entertainment, Digital Imaging

TREND EVOLUTION

With gesture recognition and control becoming more accurate, interfaces requiring fewer physical input devices are beginning to emerge. Alongside the development of 3D content, advances in tactile technology are bringing more tangible sensations to these intangible interfaces.



SENSE-ABLE WORLD

VIRTUAL
INTERACTION

Through a combination of projection devices, 3D technology and intelligent gestural control, designers are creating immersive experiences that allow for interaction with and manipulation of virtual objects. By extending content beyond the confines of a flat screen, this technology is making new forms of viewing and interaction possible.

INDUSTRY INSIGHTS



“If you really think about it, the beauty of this development is that the technology disappears. We’ve been spending so many years trying to teach more people how to use technology. Now we are teaching the technology how to learn humans.”

Aaron Greenberg

Director of Product Management for the Xbox 360, Microsoft



“We’ve been tracking the development of sculptures where the designers identify elements within structures and project interactive content onto those facets. Participants can walk over them and make the projections change, giving an unexpected experience.”

Marcel Twohig

Interaction Design Expert
Co-Founder, Notion Design



“The problem with hologram technology right now is that it creates a visual cue, but there’s no tactile cue. So you definitely need some sort of virtual pointer that also goes into that holographic realm, and then you can actually track with it. You would love it if you could see the hologram and then actually touch it, somehow, but there’s a disconnect that we’re having right now.”

Santiago Alfaro

Object-Based Media Expert
MIT

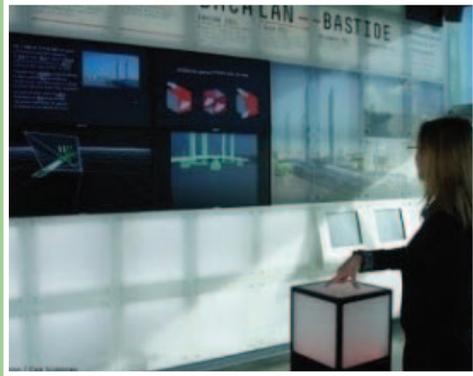


“The challenge for 3D is to use it to add to the experience. Right now in movies it’s beautiful and compelling, but the story is still the same. Producers are not yet using 3D to change the storytelling, but there’s opportunity there if they have the right tools to do so.”

Santiago Alfaro

Object-Based Media Expert
MIT

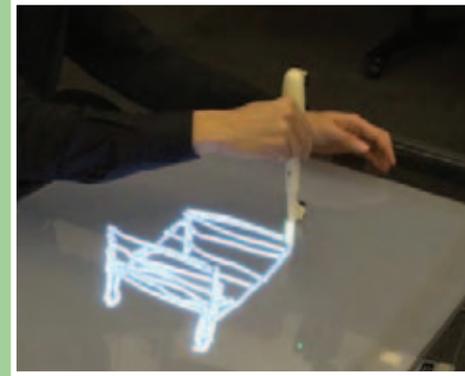
KEY MANIFESTATIONS



A 3D INTERFACE FOR MANIPULATING 3D CONTENT

To overcome the challenges of interacting with 3-dimensional content on a 2-dimensional screen, Cubtile has developed a physical cube-like device to act as an advanced mouse interface. Users can rotate and scale along 3 axis more intuitively to better manipulate and navigate virtual environments.

www.cubtile.com



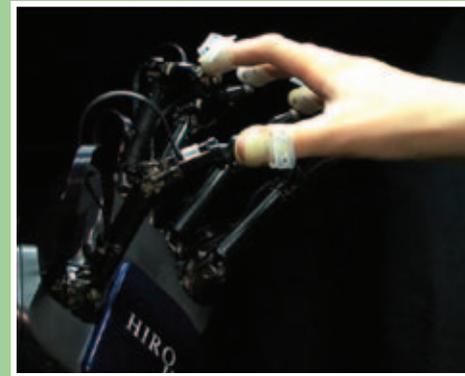
A PHYSICAL TOOL FOR INTERACTING WITH 3D OBJECTS

Beyond is project from the Tangible Media Group in the MIT Media Lab that explores methods for turning physical objects into virtual 3D ones. When the pen-like tool is pressed against a touchscreen it extends virtually into the 3D space, so that the user can draw or interact with other objects more intuitively.



TURNING A 3D TV INTO A HEADS UP VIRTUAL DISPLAY

In order to build a fully workable but low-cost virtual display system, researchers at UC San Diego have paired a Samsung 3D TV with a half-silvered mirror and a touch-feedback controller. The system allows the researchers to have a heads-up projection display with a haptic interface without relying on expensive virtual reality gear.



PROJECT ADDS HAPTIC FEEDBACK TO VIRTUAL OBJECTS

The Mouri Laboratory at Gifu University in Japan is researching and developing a touch interface for working with 3D projections. Their HIRO III project is a glove-like haptic interface robot which can provide realistic kinesthetic sensations to the user's hand and fingers, reacting to a synced 3D display.



TOUCHABLE 3D HOLOGRAPHY

Japan's National Institute of Advanced Industrial Science and Technology has developed the i3Space system, which attaches a series of fingertip modules to a user's hands to provide a tactile and kinesthetic sense interface. With this responsive method of manipulating 3D imagery the research group sees potential uses in the medical field or as a new kind of video game interface.



ROLLER COASTER GETS MULTITOUCH 3D

With a powerful system of processors that can recognize the gestures of up to 66 guests and 132 hands, The Space Fantasy attraction at Universal Studios Japan is the first large park to bring immersive 3D tracking and multi-touch technology to rides. Once on the ride, visitors directly interact and control the content on the 3D screens around them as part of the experience.

Designers are building platforms that turn everyday activities into game-like interfaces. With the ability to now recognize and track more kinds of user inputs, these systems represent data in ways that allow individuals to playfully interact with environments, often while accomplishing some other task at the same time.

REAL WORLD GAMING

SENSE-ABLE WORLD



SENSE-ABLE WORLD

REAL WORLD GAMING

People's daily activities are becoming game-like in nature, fueled by technologies that capture data from the environment and integrate them into playful experiences.

OPPORTUNITIES

PLAYFUL TUTORIALS:

Tutorials and how-to interfaces should simulate playful or engaging game-like experiences.

FEATURE SCAFFOLDING:

Advanced features within a device can be unlocked bit-by-bit as a user becomes more familiar with it.

MOOD SENSITIVE:

Interactions with electronics can include recognition systems that engage with a user based on their mood.

USAGE TRACKING:

Electronics can stay aware of a person's usage, collecting information that is later translated into points or matched alongside a game-like interface to help them understand more about their behavior.

CONSUMER BENEFITS

MY DAILY ACTIVITIES ARE MORE ENTERTAINING:

Life is less repetitive because of game-like elements that add a twist to mundane tasks.

LEARNING IS MORE INTUITIVE:

I can learn new skills more easily because the difficult parts are made into a playful experience.

MY PHONE IS A GAMEPIECE:

I can use my phone in many different places as an interactive part of games.

DRIVERS

- Development from accelerometers to gyroscopes for heightened movement detection.
- Advanced Image processing, recognition and pattern detection software.
- Sensor devices becoming smaller, cheaper, and more easy to work with.
- Increased ability to collect and layer data streams in ways that track and grow with the user.

IMPACTED GBMS

Mobile Devices, Personal Computing, Home Entertainment, Digital Imaging

TREND EVOLUTION

The spread of game mechanics into more platforms and services has been sparked by services that track checkins and behaviors. Designers are now working to move beyond simple point systems into interactions with devices that use this data to bring some element of genuine play.



SENSE-ABLE WORLD

REAL WORLD
GAMING

Designers are building platforms that turn everyday activities into game-like interfaces. With the ability to now recognize and track more kinds of user inputs, these systems represent data in ways that allow individuals to playfully interact with environments, often while accomplishing some other task at the same time.

INDUSTRY INSIGHTS



“Let’s say we attach a sensor on our floss container. That’s enough for it to notice that you’ve at least picked it up, and you can see how many times you’ve done it in a week. You can compete against yourself and your spouse. The sensors are almost small enough now. It’s getting there, and it’s getting really cheap.”

Steven Dean

Data Tracking Expert
N.Y. Organizer, Quantified Self



“What we’ve been creating, as we’ve taken these gadgets out of our office and living rooms and brought them with us into the world, are experiences that blend information, entertainment, and interaction. When you’re taking a photograph or looking up a map on your smartphone, you’re really waving around a video game controller.”

Tim Carmody

Contributing Editor, Wired



“The gamification trend is very noticeable. These are all aspects of society, designed using game principles including interfaces, websites, social networking, loyalty campaigns, and the workplace. I expect game designers to be increasingly involved in the design of experiences, not with the aim of not designing a game, but to develop innovative processes using gaming principles.”

Marcus Vlaar

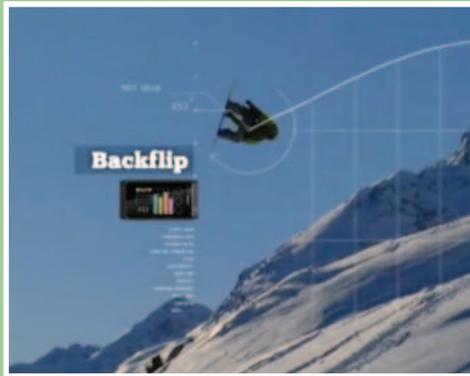
Game Design Expert
Founder, RANJ Gaming Studio

\$7B

Projected amount of dollars the virtual goods market is set to generate per annum by 2012

US Virtual Goods Market Report, 2010

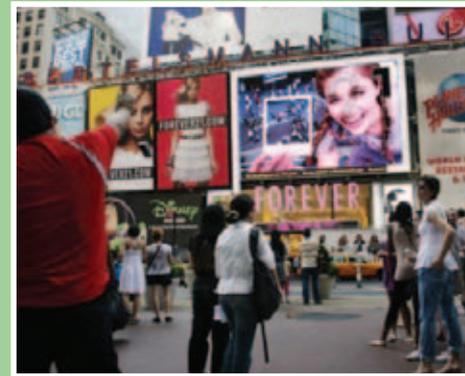
KEY MANIFESTATIONS



CONNECTED SNOWBOARDS RECORD REAL-LIFE TRICKS

Nokia's Push project integrates sensors onto skateboards and snowboards, collecting motion data about tricks and movements the user is making while riding. This data is pushed wirelessly to a Nokia phone carried by the rider, where individual tricks are collected, analyzed, scored, and laid onto a game-like interface.

www.blogs.nokia.com/pushburton



INTERACTIVE BILLBOARD DIGITALLY PLAYS WITH OUTDOOR CROWDS

Communications agency Space150 recently unveiled an interactive billboard built on advanced surveillance equipment and computer vision technology, launched in New York's Times Square. The 61-foot digital billboard features virtual models who interact with the crowd, whether picking up an individual from the crowd and turning him into a virtual frog with a kiss or dropping them into a shopping bag.

www.space150.com



PROJECTION INTERFACE MAKES YOUR WORLD A PLATFORMER

Twinkle is an interactive interface built in Japan on the combination of a pico projector, video camera, and accelerometer. The system projects a character onto any surface, while the camera constantly runs image processing software to identify objects the character can interact with. The accelerometer detects movements in the handheld device to control the character's interactions with everyday objects.

www.projects.tachlab.org/twinkle



IPAD/IPHONE AS PING PONG TABLE

Ping Pong Battle is an American application that works across a system of iPhones and iPads on the same local network. The game delivers a ping pong experience by making two iPhones as motion-sensitive paddles and using an iPad into a table.

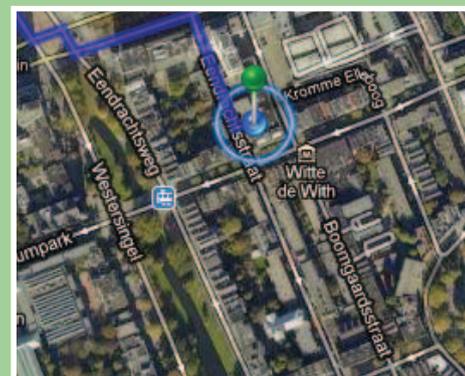
www.pingpongbattle.com



TURN THE IPAD INTO A GUITAR TEACHER

Miso is an American guitar training application based on a colorful scrolling interface familiar to fans of the Guitar Hero series of games to represent tablature notation. The app uses polyphonic note detection to hear what the user is playing on their actual guitar, scrolling the upcoming notes along with the user in real-time.

www.misomedia.com



ALTERNATIVE NAVIGATION ENCOURAGES PLAYFUL EXPLORATION

Serendipitor is a navigation app for the iPhone built by a US-based designer that takes a non-traditional path to find a destination. After entering the location the phone routes users along a complicated route according to rules of the Fluxus art movement. Complexity can be decreased or increased according to taste and time.

www.serendipitor.net

EMERGING TRENDS

Early signals uncovered during research point to developing technologies that anticipate future consumer needs that aren't currently being addressed. Identifying these gaps and responding with solutions presents opportunities to lead the marketplace in innovation.

MOBILE ENERGY

LONGEVITY

As people become more accustomed to mobile lifestyles, they expect their devices to be more efficient with power management. In an effort to meet these competing requirements, more efficient technologies are being developed to offer users options to extend battery life without having to sacrifice on quality or performance.

CTRL-Z

ELECTRONICS

Devices and software are being developed with functionality that specifically allows users to easily correct for mistakes. These take the form of predictive technology that is preemptively aware of potential common errors, but can also be more simple solutions for restoring conditions back to their original state.



EMERGING TRENDS

MOBILE ENERGY LONGEVITY

As people become more accustomed to mobile lifestyles, they expect their devices to be more efficient with power management. In an effort to meet these competing requirements, more efficient technologies are being developed to offer users options to extend battery life without having to sacrifice on quality or performance.

EMERGING TRENDS

REMOTE ENERGY CONTROL

Consumers electronics can be designed to manage energy more intelligently, for long use between recharging periods.

OPPORTUNITIES

CONTEXT AWARE:

Mobile phones and tablets should be context aware to adapt their energy uses.

ENERGY USE OPTIONS:

Devices could give users the option of determining how long they want a its battery to last, so that the device can adjust its settings accordingly.

CONSUMER BENEFITS

I'M FREE FOR LONGER:

I can spend my day travelling without having to go home or make a pit stop and plug in.

I HAVE PEACE OF MIND:

I can count on my mobile device to always be available when I need contact or directions.

I'M MAKING LESS IMPACT:

I need to tap into the energy-grid less often and therefore reduce my environmental impact.

DRIVERS

- Innovation in battery technology that allows for a longer lasting charge.
- Consumers rising concern for unnecessary power usage.
- Technology that captures energy that would otherwise go to waste.

IMPACTED GBMS

Mobile Devices, Personal Computing, Digital Imaging

TREND EVOLUTION

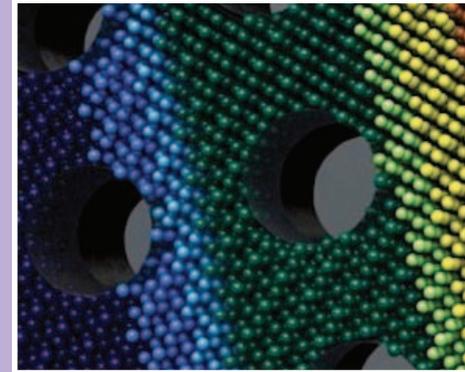
Innovations in battery materials have made it possible to explore different form factors within the products they power. Researchers are uncovering ways to passively collect energy outside of solar power.



KEY MANIFESTATIONS

**DUAL SCREEN MOBILE DEVICE
FOR EFFICIENT BATTERY USE**

A prototype Android phone developed in Russia features both front and back screen for information display. The secondary screen uses e-ink when the front is turned off, allowing notifications to appear while drawing significantly less energy.

**WASTE HEAT FROM ELECTRONICS
CONVERTED TO ELECTRICITY**

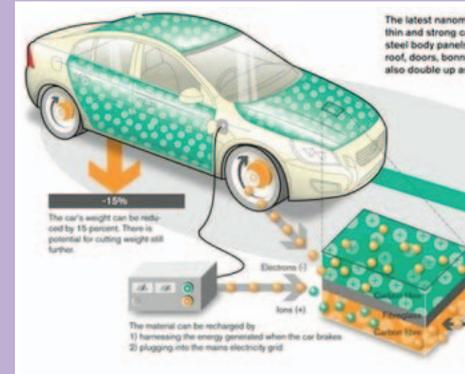
Researchers at the California Institute of Technology have been working with semi-conducting material with the capacity to turn waste heat from computers into additional energy. The materials take advantage of advances in efficient conductivity, allowing for smart supplementary energy.

www.caltech.edu

**NEW MINI PROJECTORS REQUIRE
LESS BATTERY**

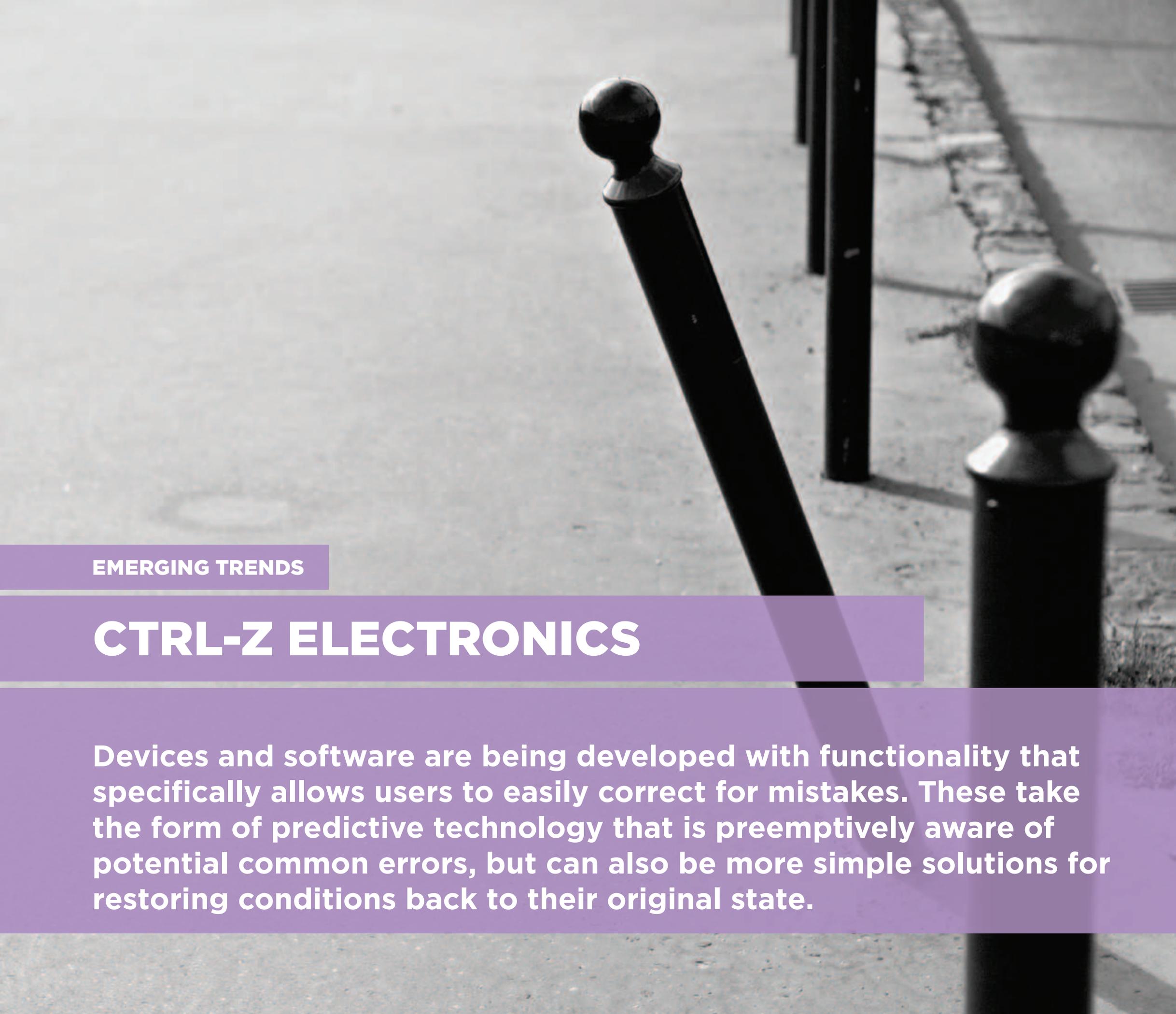
A Swiss company called Lemoptix has created a tiny projector that uses miniature mirrors and reflect red, blue and green lasers to project VGA images onto a 15-inch screen. With the mirror display method the micro-device uses 30 percent less power than similar projectors and is small enough to be integrated in cellphones.

www.lemoptix.com

**DEVICE STRUCTURE AS BATTERIES**

Swedish car company Volvo has a new concept car with nanomaterials embedded into its panels, allowing these structural panels to function as battery storage as well. The design demonstrates how supplementary energy can be stored in the structure of devices like mobile phone casings, such that they act as a source of backup power.

www.volvo.com



EMERGING TRENDS

CTRL-Z ELECTRONICS

Devices and software are being developed with functionality that specifically allows users to easily correct for mistakes. These take the form of predictive technology that is preemptively aware of potential common errors, but can also be more simple solutions for restoring conditions back to their original state.

EMERGING TRENDS

CTRL-Z ELECTRONICS

People want electronics to anticipate mistakes and adjust to create

OPPORTUNITIES

ANTICIPATORY TECH:

Imaging devices should anticipate user error and give the option to choose better imagery.

GUIDING THE USER:

Samsung devices should guide users towards better use over time.

CONSUMER BENEFITS

MY ELECTRONICS GIVE ME A SECOND CHANCE:

I can be less concerned about getting a perfect shot first time because I know that my camera is helping to capture the best photo for me.

MY ELECTRONICS TEACH ME HOW TO BETTER USE THEM:

Built in feedback on how to best take a photo or use a program acts as a continuous tutorial, ensuring that I get the most out of an application or product.

IT TAKES LESS TIME TO GET IT RIGHT:

My electronics seem to sense that I'm about to make an error and compensate.

DRIVERS

- Advanced prediction technology that allows devices to predict potential needs.
- The development of camera lenses that capture more raw image data.
- Smart recognition systems that can give people cues about the environment.
- Increased memory capacity that lets devices contain more data.

IMPACTED GBMS

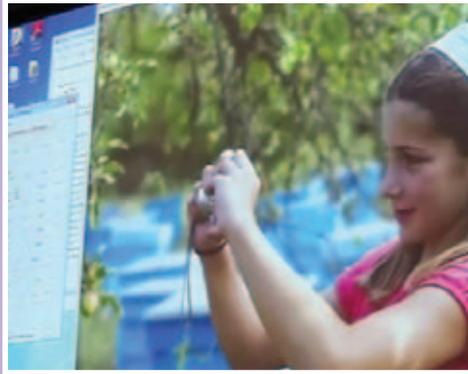
Mobile Devices, Home Appliances, Digital Imaging

TREND EVOLUTION

Electronics are beginning to have the capacity for more raw processing and storage power than is necessarily required for any given task. This excess is being used to keep more output options available for people as they use devices.



KEY MANIFESTATIONS



SOFTWARE LETS YOU REFOCUS PHOTO AFTER IT'S TAKEN

Adobe is working to build cameras featuring advanced plenoptic lenses composed of hundreds of tiny "sub-lenses." With a vastly increased depth of field and raw image data available, the accompanying software is able to refocus the image after it has been taken.

www.adobe.com



CELLPHONE DRYER SAVES YOUR PHONE

A number of Yodobashi Camera locations throughout Tokyo now feature the Dryer Box, which is a device to help owners recover water-damaged phones. The device removes moisture from the air, allowing phones to quickly return to an undamaged state without dismantling any components.

www.rs.jmc.ne.jp/services/systemsolution/dryerbox.html



PRINTER ALLOWS YOU TO UNDO PRINT JOBS

The PrePeat printer by Japanese electronics company Sanwa Denshi uses no toner, operating with heat-sensitive plastic sheets instead. Using this method, the sheets are reusable up to 1000 times, allowing for printing errors to be immediately undone.

www.sanwa-denshi.com.jp



CAMERA INFERS BEAUTY BEFORE YOU SNAP A PHOTO

Using the artificial intelligence inference engine AQUINE, a modified camera from a German designer can take advantage of computer-based prediction of aesthetic quality based on advanced image recognition. This allows the user to have insight on whether the photo they are about to take will turn out poorly, and gives a frame of reference for adjusting images once taken.

www.andrewkupasnanin.com/projects.html#nadia

APPENDIX

TASTEMAKER APPENDIX



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Biometric tracking & lifecaching expert who organizes Quantified Self, a collaboration of users and tool makers who share an interest in knowledge through self-tracking.

“Let’s say we attach a sensor on our floss container. That’s enough for it to notice that you’ve at least picked it up, and you can see how many times you’ve done it in a week. You can compete against yourself and your spouse. The sensors are almost small enough now. It’s getting there, and it’s getting really cheap.”

“The grocery store is probably one of the places we’ll see self-tracking really impact the social behaviors of people. The data already exists because the check-out records everything. As people become more comfortable with having this data public we’ll see it become a part of recommendations.”



Design expert at MIT’s Object-Based Media Lab, where he researches multi-screen and virtual displays.

“There’s a developing idea of being able to watch a program, while your television replays all the other reactions and all the other comments at the moment they are being made, and you could see how excited people are getting as well as how excited you are getting at the same time.”

“Your cell phone should be able to know by itself that you just missed a plane, based on GPS and your calendar. It should already be making calls saying that you missed the plane to whoever dropped you off and to wherever you’re going. It should be talking to your airline to see what solutions you have.”



CEO of Mindsmack and creator of the FastMall mobile application, which gives users an interactive guide through interior retail spaces without using GPS.

“It makes sense to use your camera to figure out what’s around you, because you don’t have to type in a search and you don’t have to decide how to word it. All the information is easily provided. These kinds of intuitive technologies help make things easier, fun and interactive for people.”

“What developers have to realize is, by simplifying interfaces and information capture they can create a truly fluid experience for the user. When data can be quickly analyzed and choices can appear beneath your finger tips, high involvement purchases will be made in the blink of an eye.”

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Co-founder of Notion Design, an award winning Industrial Design studio. He began his industrial design career at LG electronics.

“Television is not a place where people tolerate clutter and widgets. So if you acknowledge that and create a device where your communal interactions are in front of you you have a much cleaner experience. It’s a simple insight but very relevant to how we’ve seen users interact with screens.”

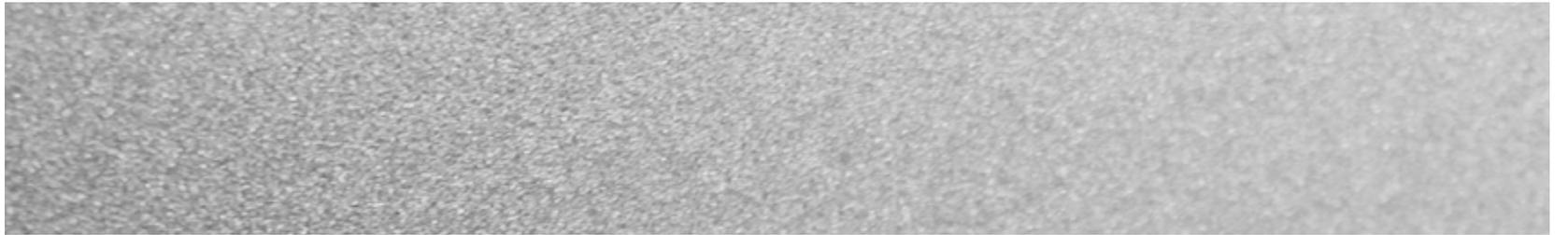
“Designers are working to understanding how users can interact in a network where every device is connected. The obstacle is representing them intuitively, giving the user control and promoting interactions with devices on a personal level.”



Co-founder of Notion Design, an award winning Industrial Design studio. His knowledge of branding has helped Notion become internationally known.

“What good visualization does is democratizes information, which is very powerful in terms of controlling energy. Nobody has really nailed this for energy management yet, but someone is going to do it, and they’re going to put it into an app.”

“Right now viewers are not getting information specific to what they want to watch; instead, a broadcaster is trying to give the information that they think a wide audience is interested in. By separating information feeds onto a personal device, it gives people the opportunity to tailor what they watch.”



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