

# 2015 Trends

## people & communities

## time & place

## motives & practices

## markets & industries

## tools & technologies

### continuous reinvention

*From familiar boundaries to ever-changing focal points*  
As mobility and interconnectedness break down the traditional boundaries between roles, functions, organizations, and cultures, emergent phenomena will create a complex landscape in which ephemeral focal points briefly reinvent work, commerce, and daily life—and then fade away.

### the engaged consumer

*From infomated consumers to digitally expressive consumers*  
From youth growing up on the Internet to aging baby boomers who continue to seek new meanings from life, consumers will shift their attention from rational, efficient transactions to meaning-making—focusing on active participation and self-expression.

### proactive environments

*From user controls to sensors and agents*  
As digital technology becomes increasingly embedded in the physical objects of daily life, human environments will begin to anticipate human needs, using sensors, pattern recognition, user profiles, and agent-based modeling to deliver services and content custom-tailored to the moment.

### an economy of well-being

*From medical models to market opportunities*  
Biotechnology and digital technology will intersect with a growing emphasis on health values in everyday life to create a burgeoning health economy in which consumers will look for health and well-being in a host of unexpected places.

### instant business

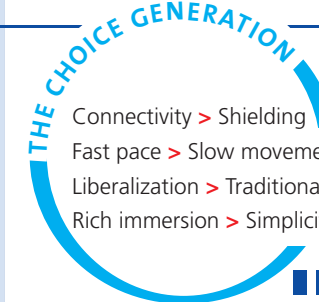
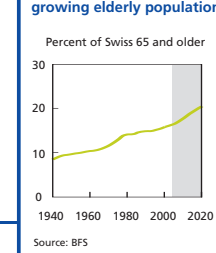
*From strategic partnering to opportunistic sourcing*  
From social networking software to agent-based contracting, the tools of the enterprise will create a world in which ad hoc relationships—and new cooperative strategies—drive business growth and global trade.

### grassroots innovation

*From proprietary inventions to grassroots innovation*  
Riding the waves of peer-to-peer technology, social software, and unlicensed spectrum, innovation will feature ever more challenges to conventional markets, proprietary processes, and private property.

### MORE HOUSEHOLD DIVERSITY

- Single householders
- Single-parent households
- Multinational households
- Patchwork families

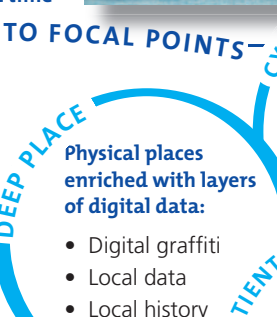
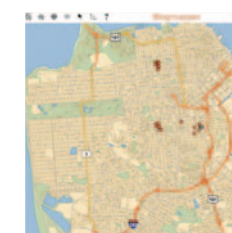


### IDENTITY SPREAD

- Multiple identities across multiple physical-digital spaces
- 24/7 communities
- Cars and trains as workspace/lifespaces
- Wait time as



### FROM BOUNDARIES TO FOCAL POINTS—CYBER HUBS



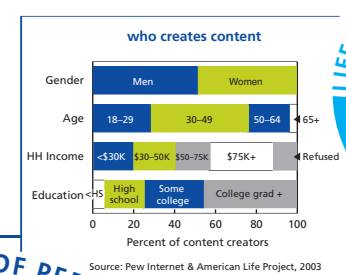
Users spend time at hot spots of rich connectivity for technology, work, & play  
Sensors recognize location of people & objects—and respond intelligently

- ### EMPOWERED CONSUMERS
- Self-agency
  - Self-customization
  - Self-organization
  - Patchwork families

**Tech-savvy boomers & more buying power for kids mean potential for market growth**

### NEVER LOST, NEVER A STRANGER

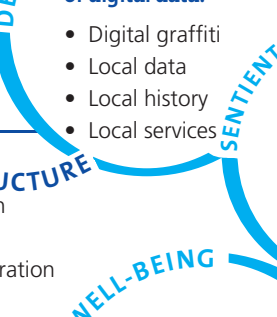
- Wherever you go, the network knows who you are & what you need to know



**LIFE CACHING**  
People document their lives—expressive personal media like blogs & wikis challenge mass media

### THE NEXT INFRASTRUCTURE

- Mixed wireless location technology
- Geo-information integration technologies
- Geo-coded data
- Geo-data search
- Geospatial standards

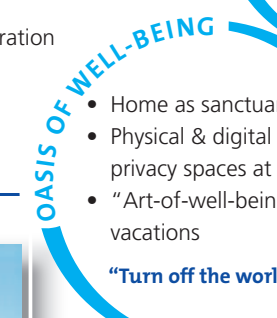


### EXPLOSION OF PERSONAL CONTENT



### STRUGGLE FOR LIFE BALANCE

- Work
- Family
- Body
- Spirit
- Continuous learning

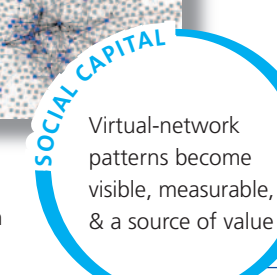


**BOTTLENECK: Privacy laws & practice**

### FREE AGENTS

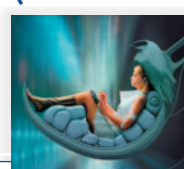
- Individuals function as enterprises—especially women in creative new business roles

**VALUE SHIFT**  
• From information to knowledge



### TIME COMPRESSION

- Productivity grows:
- 1940s: days
  - 1970s: hours
  - 2000s: minutes

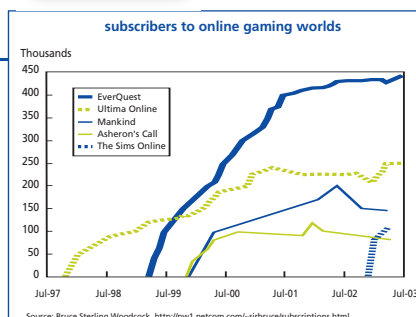


### NEW BUSINESS SPACES

- Work clubs
- Cyber cafés
- Home offices
- Augmented virtual workspaces

### THE GAME ECONOMY

- Alternate realities
- Massively multiplayer games
- Casual gamers
- Women gamers



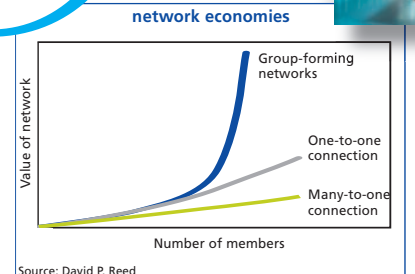
### NEW PAYMENT OPTIONS

- Boost to online shopping

**BOTTLENECK: Fear of payment scams & fraud**

### POWER COMMUNITIES

- Two kinds of power holders:
- Those who hold network data
  - Those who have many network relationships



### SMART MOBS

- Collective action & collective intelligence:
- Connective technologies
  - Online organizing
  - Leaderless movements
  - Fast and global!
  - Group forming networks



### COOPERATIVE STRATEGY

- Alternatives to competition > new models of business collaboration
- Standardization changes the business paradigm

### VERTICAL COLLABORATION

- Dynamic partnering
- Complex revenue sharing models
- Single point of contact

### ANGER: DARK INTERNET

- Pervasive data encryption creates a hidden & unresponsive Internet

**BOTTLENECK: Regulatory uncertainty**

### SMART PRESENCE

The multichannel phone call will be instantaneous & persistent:

- Voice
- Visual
- Moods
- Background
- Presence over distance



### PARTICIPATORY CONSUMPTION

- Consumers control:
- Place & time
  - Content
  - Interaction
  - Virtual vs. physical
  - Risk & responsibility

### SMART SHOPPING

- More price sensitivity
- Design-driven purchases
- Cheap but chic
- Online product/price comparisons

### EXTREME EXPERIENCE

- Technology adapts to skill levels
- Users demand instant gratification and instant share of the moment



### SMART SHOPPING

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### EXTREME PERSONALIZATION

- On demand and user-managed:
- Learning
  - Entertainment
  - Sports
  - Health care
  - Content
  - Products

### VIRTUAL PRESENCE

- Ambient communication
- Subjective experiences of presence
- Information & entertainment match context, mood, body states

### REAL-TIME PROFILING

- Passive & active RFID
- Smart dust

### NEW KINDS OF COACHES

- Online & real world:
- Personal well-being
  - Environmental well-being
  - Workplace well-being

### WELL-BEING BOUNDARY MARKETS

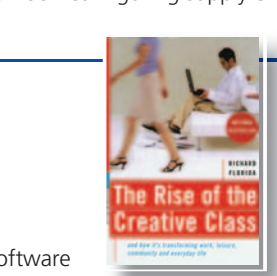


### SHORTER MARKET CYCLES

- Product proliferation
- Microproduct management
- Virtual power sellers
- New kinds of middlemen
- Self-configuring supply chains

### INDUSTRIES SHAKE-UP

- New roles of consumers, service providers, advertisers & content creators redefine industry boundaries



### THE NEW DISTRIBUTION

- Intellectual property rights are under pressure
- P2P digital content auctions change distribution

**Rise of the creative class & knowledge workers**

### MORE WAYS TO VIEW CONSUMERS

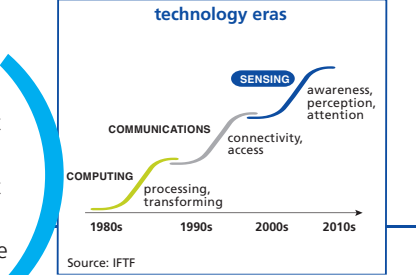


### METADATA

Interoperable descriptions for:

- Supply chains
- Business documents & cooperative business processes

### A SENSORY TRANSFORMATION



### NEW RESOURCES, NEW PLAYERS

- Nanomaterials
- Organic materials
- New demand: China

### UBIQUITOUS BROADBAND

- Seamless
- Always on
- Network agnostic

### INTUITIVE TECHNOLOGY

- Context aware
- Ambient presence
- Emotional intelligence
- User interface

### MACHINE-TO-MACHINE RELATIONSHIPS

- Smart devices
- Robotics
- Intelligent sensors
- Self-configuring sensor networks

### DISPLAYS EVERYWHERE

- Flexible displays
- Digital wallpapers
- Electronic paper
- Holographic screens



### ACTIVE WEARABLES

- Smart clothing & jewelry
- Transdermal t-shirts

### PREVENTIVE PERSONALIZED MEDICINE

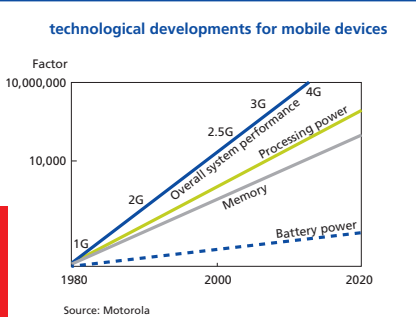
- Right time, right place, right person testing
- Monitoring alerts

### SECURITY

- Biometrics
- Identity management
- Quantum encryption
- Implants & IDs
- Forensics

### OPEN SOURCE

More than just software—a new economic model?



**BOTTLENECK: Small-scale energy solutions**



# Industry Foresight 2015

A VISION  
BEYOND  
THE  
FRONTIER



Seeing into the future is an act of creation. It's a willingness to innovate and improvise on the present, an ability to transform what is into what will be. This map captures the foresight of Swisscom Innovations. It's about the people and practices that will shape human experience from the home to the workplace to the marketplace. It anticipates the big industry shifts, the new tools and technologies, and the changing nature of time and distance, place and space. This vision is no less than the reinvention of human communication.

We invite you to look at the future through eyes remade for innovation, to take this map as a starting place for the many important and stimulating conversations that will take place in meeting rooms and community spaces. We encourage you to explore the six compelling trends we've identified—from continuous reinvention by engaged consumers to a more "instant" model of business, driven by grassroots innovation. And then we invite you to imagine with us the many new ways we can create value in this emerging world.

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## people & communities

### *Households become more diverse with more complex roles*

Although traditional families still dominate the Swiss landscape, households will drift toward more diversity: more single-parent families, more multinational families, and more singles and elderly living alone or in households of convenience. Switzerland will also get a burst of highly educated newcomers. Individual identities will be more complex as people adopt new roles in these new kinds of households, new relationships with work and the world of business, and new personas in the digital world.

### *People have more choices, consumers have more power*

With diversity come more choices. People will balance seemingly contradictory lifestyles, choosing traditional values and simplicity in some cases but flexibility and novelty in others. They will also wield more power—customizing products and services to their needs and drawing on a new connectedness to create communities. Kids will control more of their own spending, parents will treat their children as "projects," and aging baby boomers will continue their love affair with gadgets. The result: a broader spectrum of market opportunities and a greater demand for simple, yet technologically flexible products and services.

### *People know more, express more*

The next decade will see an explosion of content, and individuals will create much of it. They will use personal media tools to create "life caches" that capture their experiences digitally. And they will find themselves plugged into systems that recognize and track them, feeding them everything they need to know to be instantly at home in the physical-digital spaces they occupy.

### *Diverse personal ecologies of well-being emerge*

People will have more choices about the health and well-being strategies they pursue, resulting in a broader definition of health. They will take on more responsibility, crafting their own individual ecologies of well-being from a combination of traditional health care activities and resources plus a variety of lifestyle choices aimed at finding the best balance of work and family life, physical and spiritual well-being, environmental sustainability, and continuous learning.

### *Social networks become more visible, more valued*

As new tools enable people to build and monitor their social connections, networks will become more visible and companies will measure employee networks to evaluate performance and build corporate value. Meanwhile, experiments with social software will build on Reed's Law, which asserts that the value of group-forming networks grows exponentially (compared to linear growth for one-to-one and one-to-many networks)dh.

### *People find their voices in like-minded communities*

With more connectedness, new kinds of communities are emerging based on common interests as well as co-location. These communities will have an increasing impact on business and politics as groups muster funds, information, and human resources to pursue their own goals.

## time & place

### *The 24/7 culture redefines space and place*

Cybernomadic culture will redefine public spaces. Mobile workers, hyper-connected young people, and digital creatives will occupy them in new ways. Workspaces will be unbundled as workers choose a variety of public and private spaces for different tasks. The result will be a hollowing out of traditional workspaces and a "niche-ification"—even privatization—of public spaces. Restaurants, cars, and trains will be reinvented.

### *A geospatial web creates a new incarnation of the Internet*

The Internet will mutate yet again as geo-coded information is integrated into a geospatial web. The build-out will happen both from the top-down (with network location technology and commercially packaged geographic information) and from the bottom-up (with location-sensing applications and geo-tagged data). The result: a new kind of "deep place," with layers of previously invisible information about the demographics, ecological features, commercial services, and social narrative of the place.

### *Cyber hubs become "the place to be"*

Mobile broadband users will adopt cyber hubs—hot spots that support deep connections between the physical and digital worlds, between work and non-work activities, and among affinity groups. These hot spots will be the source of innovative services that are not necessarily characterized by ubiquity. They will also become increasingly smart and sentient as sensors track the people and objects within them.

### *Life struggles trigger a search for life balance*

In a technological world, the need for "natural" niches and technology-free zones will grow. Private as well as public spaces that promise freedom from emotional and physical stresses—such as radiation exposure—will provide relaxation and shelter from the struggles of daily life. Time compression will drive a backlash in which people will be more selective in their choice of relaxation strategies, avoiding some of today's media offerings.

### *Work moves into new public and private spaces*

Mobile workers will begin to convert public and private spaces alike to workspaces. Already they are "colonizing" cafés, libraries and other semi-public spaces, while entrepreneurs experiment with new kinds of work clubs; patterned after health clubs, these venues provide distributed work space and infrastructure for workers on the move. Home offices will become an increasingly prevalent extension of the workplace, while augmented virtual workspaces foster high-tech presence and even cognitive support for groups of remote workers.

### *Consumers take the reins of time and space*

As consumers assume more responsibility for their lifestyles, they'll want more flexibility in the ways they interact with friends, workers, and media. They'll choose their own programming on their own schedule, integrating different media on a single screen and drifting away from prime-time TV for the masses. At the same time, they will create bursts of focused large-scale demand as they join together in smart mobs and flash mobs, enabled by new connective technologies.

## motives & practices

### *Technologies extend human identity*

Our tools will become more intimate as technologies enhance our bodies and minds with wearables, medical implants, and cognitive aids. These augmentations will challenge our basic definitions of what it means to be human, raising issues of the individual vs. the collective and natural vs. artificial. These dichotomies are likely to be flashpoints for technological backlash.

### *Multiple communication channels redefine the "phone call"*

Voice, video, various conferencing forms, mood tracking, and presence tools will be increasingly integrated into everyone's communication practices, shifting attention from the phone call as a short burst of communication to an extended, ambient presence, with obvious implications for metering.

### *Consumers are smart shoppers, active participants*

Smart shoppers will define a more complex marketplace where bargains and luxury goods go hand-in-hand. Active consumers will engage in online price comparisons and share product experiences. In entertainment, personal participation and co-creation will take over where broadcast media end, offering a practice ground for developing new work skills as well.

### *Experience becomes a practice and a project*

Viewing the self as a project, people are cultivating and collecting experiences. Many of these emphasize the extreme and the immersive—from helicopter snowboarding trips in the Himalayas to month-long silent meditation retreats. Two results: branding experiences will be more important than branding products and services, and brands with no meaningful customer involvement will struggle for attention.

### *Personal profiling reshapes products and services*

Profiling technologies will enable product and service providers to target specific individuals and contexts. This trend will be most important in entertainment and information markets, where offerings will match the mood and body states of individual consumers in real-time. User-generated metadata will drive micro advertising.

### *A game economy blends the physical and digital worlds*

As the market for games tops the market for film and television, games will be more immersive, non-stop, and integrated with everyday reality. Baby boomers—especially women—will create a new boom in casual gaming, and some will use their game activities to generate money in the real world.

### *Cooperative strategies change business practices*

In a network world, cooperation and common-pool resources will be a key to business success. New research is introducing cooperative concepts such as synchrony, symbiosis, collective action, and collective intelligence into the strategic vocabulary of companies. New commercial practices—from peer-to-peer auctions and peer production networks to vertical collaboration and revenue sharing models—will redefine business.

## markets & industries

### *Market segments are redefined*

As channels fragment and consumers personalize products and services, traditional market segmentation will be inadequate. In addition to demographic indicators, markets will increasingly be defined by users' social networks, by swarms, and by different contexts in which services and products are used. User experiences will be another lens for viewing consumers, and even markets of one will become viable for some kinds of transactions.

### *Sensors link digital information to physical objects*

Tagging—including both active and passive RFID as well as bio-tagging—will change the logistics of manufacturing, distribution, and retail. It will also bind data to the physical world. Combined with other sensing technologies, tags will usher in the "decade of sensors." If the 1980s were the era of computing and the 1990s were the era of communications, this coming decade will begin an era of greatly extended sensing, catalyzing new social, economic, and cognitive practices.

### *New payment options slowly gain consumer confidence*

In spite of their cautious stance toward online purchasing, consumers will gradually adopt Web-based payments with unified electronic billing solutions that include short-range person-to-shopkeeper or person-to-person payments. Over-the-air payments will make it possible to pay for services and goods with trusted devices.

### *Industries undergo shake-ups as market cycles shorten*

Several trends will create a less stable landscape of industries. Digitalization and ubiquitous broadband are changing corporate decision processes, shortening release cycles and allowing faster configuration of industrial supply chains, including virtual power sellers. Telecom, computer, and consumer electronic companies are struggling for the same customers; they will thus need to partner through the entire value chain. Meanwhile, regulatory uncertainty will increase with rapid change in telecom technologies and markets, demanding a more proactive stance from players within the industry.

### *Content gets liberated*

Digital technology is liberating content from its traditional containers, whether books, music CDs, or even DVDs. Now broadly available on the Internet, both legally and illegally, digital content will increasingly escape traditional proprietary ownership, triggering a host of alternative compensation systems (such as peer-to-peer digital content auctions) and alternative copyright systems.

### *Grassroots offerings eat deeply into commercial applications*

Consumer activism, new technologies, and new production models are driving a bottom-up reorganization of the world of commerce. Grassroots technologies—open-source software, peer-to-peer, and wireless technologies in unlicensed spectrum—will be serious alternatives to commercial technologies. They will leverage community-based cost-sharing models for development and service delivery and ease rapid global delivery. These new technologies will challenge established commercial offerings, and traditional businesses will need to develop a creative co-existence with these forms.

## tools & technology

### *Devices proliferate – and get personal and intuitive*

With the proliferation of devices, people will personalize communications and computing to their lifestyles and individual identities. While consumers divide nearly equally between those who favor all-in-one devices and those who prefer many limited functionality devices, more functionality is likely to show up in more kinds of devices. Devices will have multimodal interfaces with text, speech, graphic, and haptic inputs—which will make them increasingly intuitive and context aware, supporting the evolution of ambient presence.

### *Broadband becomes a basic utility*

Emerging wireless broadband technologies and optical fiber to the home will create a world of ubiquitous broadband and computing. This powerful bundle will become the next utility, and deliver flexible resources for ad hoc, dynamic use. Enabling tools such as single sign-on, seamless handover, and on-demand computing will manage the multiple identities of users, creating an anywhere, anytime infrastructure.

### *Displays are everywhere, machines talk to each other*

Long-lasting portable energy sources (like micro fuel cells) and low-powered flexible displays using organic self-emitting technology will drive the mobile Internet. As personal portable devices become smaller and more intelligent, stationary multi-user terminals will function as "wireless docking stations" centered around displays. Displays will also show up in such diverse forms as digital wallpaper, automotive displays, electronic paper, and virtual billboards.

### *Wearables provide a personal mobile gateway*

As technology shrinks and finds its way on and into the body, fashions will increasingly incorporate more personal information and processing capability. Jewelry, clothes, and even pacemakers will take on new roles as mobile personal gateways, displays, and body monitors. Nanofabrics will deliver transdermal vitamins and medications, while digital implants will keep kids from getting lost and provide security clearance for important officials.

### *Medical technology is personalized and preventative*

The mix of low-cost, low-power medical sensors, personal area networks, and always-on Internet connections will lead toward automatic monitoring for chronic diseases like diabetes. Alerts will warn both patients and caregivers when threshold values are reached. All medical data will be stored in an online "data harbor" with real-time remote wireless access, supporting more preventive health interventions.

### *Security is complex and distributed*

Advances in terminal management, policy-based management, identity management, forensic intrusion detection, and security networks will help prevent security breaches, but intelligent, complex networks will also be more vulnerable. New encryption techniques such as quantum cryptography and broad use of IP security encryption on a peer basis will make the Internet darker and more difficult to control. Ultimately walled-garden security perimeters will lose importance while distributed security managed by central servers grows.