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Mass Experiences

Use this map to explore Technologies that matter:

Emerging Experiences: 2020-2030

Embracing Artificial Intelligence

ILLUSTRATIONS: from heuristic to optimal

ANTICIPATORY: from reactive to proactive

MULTISENSORY: from visual to embodied

PROGRAMMABLE: from solo to symphony

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Once again, technological advances are coming in tandem with new forms, flavors, and sounds. The smartphone is a literal extension of the brain, as deep learning algorithms and virtual assistants are reading and interpreting our commands with increasing accuracy, speed, and nuance. Each time an app updates, our voices are better understood, allowing us to have conversations not only with our devices but also with each other. The Internet of Things—where billions of objects such as toys, speakers, and thermostats are converging to transform how, when, where, and with whom we communicate—has become the single most important development in the history of the medium, one that builds on each other to form an increasingly complex, multifaceted landscape.

What is beyond social media? To understand the future of communications, we need to consider the evolution of human social structures and how they impact our interactions. New capacities of ambient communications networks will allow us to better integrate our life and productivity into the digital world. Deeply linked information streams and improved machine intelligence will shine a light on the dark matter of our individual and social data. New understandings of communications experiences will emerge that build on each other to form a constantly changing, multifaceted landscape.

Incorporating a wide variety of data sources, this model allows us to see how different types of information are connected and how they interact with each other. For example, a person’s communication behavior can be influenced by their current location, their social network, or their physical health. By analyzing these patterns, we can predict future behavior and respond accordingly. This approach is not only useful for businesses, but also for governments, non-profits, and individuals who seek to understand and predict human behavior in various contexts.

The use of deep learning and AI in the analysis of massive datasets allows for the development of predictive models that can forecast trends and patterns. These models can be used to inform decision-making processes in areas such as healthcare, finance, and policy-making. By understanding the underlying dynamics of human behavior, we can create more effective interventions and policies that are tailored to specific audiences.

As we continue to develop and refine these technologies, we must also consider the ethical implications of their use. How do we ensure that these systems are fair and unbiased? How do we protect individual privacy while still benefiting from the insights gained from analyzing our data? These are complex questions that require careful consideration and ongoing dialogue among experts, policymakers, and the public. By addressing these challenges, we can harness the power of these technologies for the betterment of society, while also safeguarding individual rights and freedoms.

The future of ambient communications networks is bright, but it is up to us to ensure that we use these tools with intention and care. As we explore new ways of communicating, we must do so in a manner that respects the dignity and autonomy of all individuals. This requires a commitment to ethical design, rigorous testing, and transparent decision-making. By working together, we can create a future where technology is a force for good and a tool for personal and societal growth.
machine-orchestrated entertainment

For decades, data has informed the creative entertainment industry. The makers and more of the audience have relied on tools to help tell their stories and better understand the audience. However, algorithms are getting better at informing the audience. With the right data and analysis, algorithms can help optimize content production and delivery.

searchable matter

toward a searchable, sortable physical world

Advances in computer vision, natural language processing, and machine learning are adding to the process of tagging people, places, and objects in photos, videos, and audio. For instance, a street vendor can take photos of animals, identify species, and create image folders that different computer systems or apps can use. Creating systems that can gain powerful, though imperfect, abilities to identify new word phenomena—creating the world searchable and sortable in unprecedented ways. From remotely scanning the contents of your home or identifying the most popular song playing in programming automated business processes in capturing demographics and preferences of customers and business trends about our physical world will become easy as making a web query.

biomedia

toward systems that respond to biomarkers

Already, wearable devices on our bodies can observe, measure, and record our locations and activities. This information can then be used to interact with other people. Inevitably, multimodal systems will track, store, and respond to our biometric data—such as body temperature, heart rate, respiration, and associated eye movement—in private and public contexts. These data will be transmitted in real-time to marketers, artists, urban planners, and others, who will analyze them to better understand what we’re doing, where we’re going, and why. These data can then be used as feedback to change our experiences, interactively, from one year of our system’s deployment.

machine-curated memories

toward meaningful surveillance

As smartphones have become ubiquitous, the number of photos and videos we have expanded to more than a trillion per year. Over the next decades, and for the rise of wearables, cameras and systems that go beyond simple capture to actively analyze captured moments of our lives, devices, wearable cameras such as the GoPro use a combination of sensors to understand multimedia information in videos—and including panoramic images of the moment—to tell together compelling moments into finished videos. As these and enabling privacy controls will help us to control memories on our behalf, we face new questions about how we capture, author, curate, and share our own memories.

body rights management

toward securing body media

In the early 1980s, we secured all reasonably accessible descriptions of the functioning of tagging people, places, and objects in photos, videos, and audio. For instance, a street vendor can take photos of animals, identify species, and create image folders that different computer systems or apps can use. Creating systems that can gain powerful, though imperfect, abilities to identify new word phenomena—creating the world searchable and sortable in unprecedented ways. From remotely scanning the contents of your home or identifying the most popular song playing in programming automated business processes in capturing demographics and preferences of customers and business trends about our physical world will become easy as making a web query.

toolkit

toward embodied and shared mixed-reality experiences

Early efforts with virtual reality focused on immersing us in simulated worlds and isolating us from the other people and our own physical experiences of reality. Over the next decades, advances in physics, augmented reality, and processing capabilities will allow us to break free from the limitations of virtual space and experience digital objects as present, as real things. For instance, Facebook recently demonstrated that two researchers, in their apartment, could use the technology to attach a device to the ground and create an object that could interact with other people, and even take selfies with mixed-reality objects. As these shared experiences of augmented reality emerge, they will enable us to explore shared physical presence across time and space, giving our finite physical spaces the vastness of virtual reality.

animation and reanimation

toward living likenesses for brands

Seemingly ephemeral communications—from emails to stage performances—are getting captured, remixed, and refashioned into creations and other hybrid media forms. For instance, character-based and conversational commerce are shifting brand management from prioritized to distributed communications strategies—animated prose engage in personalized conversations with consumers through automated marketing in social networks and personal devices. Meanwhile, advances in augmented reality are enabling animators to construct realistic interactions from experience and identification using real objects. In the world of providing communications partners, companies and individuals will have to balance the benefits of increasingly personalized, anticipatory interactions with the need for broadly shared representations.

machines

toward a networked global presence

Our sense organs—eyes, ears, nose, skin, tongue—are becoming increasingly connected to our networks in ways that will allow us to see, hear, and sense anything on any time in the entire world. Eventually, wireless sensors will track so many variables on so many objects that we can touch things halfway around the world. Eventually, wireless sensors will track so many variables on so many objects that we can touch things halfway around the world. Eventually, wireless sensors will track so many variables on so many objects that we can touch things halfway around the world. Eventually, wireless sensors will track so many variables on so many objects that we can touch things halfway around the world. Eventually, wireless sensors will track so many variables on so many objects that we can touch things halfway around the world.
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Cheap computation is making the
Cisco; Thomson Reuters; IFTF analysis

Today we experience synthetic realities at resolutions
that have amplified capabilities to draw attention
to their causes.

As ambient communications technologies emerge and mature, new opportunities will
rise of smart things that collect and analyze multiple
as neuroscience and psychology bring new
sophisticated efforts to capture and analyze
the rise of smart things that collect and analyze multiple
activity streams to unveil previously hidden troves of
pervasive augmented realities, allowing us to see
Proceedings of the 3rd International Conference on Robotics and Biomimetics (ROBIO 2014)

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As ambient communications technologies emerge and mature, new opportunities will
**Why do we communicate?**

**INTENTIONS IN A WORLD OF AMBIENT COMMUNICATIONS**

As ambient communications technologies emerge and mature, new opportunities will amplify ways we communicate to achieve goals across a range of intentions.

### Collaboration

**How will we co-create and generate new value?**

As communications experience gets embedded into the world around us, we will collaborate with human and machine intelligence. This seamless combination of human and machine intelligence will create new opportunities to refine how we assemble teams, define roles, and distribute routine and creative work.

- **Embedded virtual collaboration:** Holographic, on-demand, on-body—remote collaboration experiences are the new normal.
- **Digital assistant team members:** Advances in cognitive computing will turn machine intelligence into a shared collaboration tool.
- **Enveloping environments:** With built-in communication infrastructure, our physical world will be overlaid and embedded with interactions that create emotive value as knowledge gets captured and accessed in place.

### Empathy

**How will we experience and see the world differently?**

Social media give us windows into lives of billions of people, and as their interactions become more immediate and visceral, enhanced by visual and contextual information, these windows will create opportunities to reinvent how social media community becomes the extension of movements to customer service calls.

- **Persistent witnessing:** With cameras and microphones embedded in our clothes and on our bodies, we can share attention to the causes we care about.
- **Context-aware customer service:** With more machines communicating directly with each other on behalf of customers, we will be able to use machine intelligence to create personalized experiences.
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### Intimacy

**How will we enhance physical and emotional connections?**

As more communications streams weave into our lives, physical experiences become bundled, sharing context that makes machines communicate directly with us—viewers, customers, or others.

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### Productivity

**How will we optimize work and get things done?**

Traditional definitions of productivity focused on making maximum output with minimum input. In a world of digital assistants and constant connection, productivity will be defined by coordinating and programming work and communications flows between humans and machines.

- **Embedded learning and production:** Advances in algorithms will enable us to learn and perform physical tasks seamlessly and automatically, changing the boundary between human and machine.
- **Flexible and distributed scheduling:** As more communications experiences become fully distributed, sharing context that makes machines communicate directly with us—viewers, customers, or others.
- **Intelligent focus:** As more communications streams weave into our lives, physical experiences become bundled, sharing context that makes machines communicate directly with us—viewers, customers, or others.

### Persuasion

**How will we shape behavior change?**

When objects and devices become highly context-aware, the persuasive techniques built into online advertising and media will be accessible and embedded in our physical experiences. This will create new opportunities to influence how people perceive, including consumers, in guiding behavior.

- **Persuasive objects and environments:** Machine learning can create new persuasive contexts through object behavior and digital interactions.
- **Context-aware customer service:** With more machines communicating directly with each other on behalf of customers, we will be able to use machine intelligence to create personalized experiences.

### Control

**How will we secure our identities and privacy?**

Digital representations will become more persistent, representing the self in the digital world. New layers of digital awareness will emerge to help us get to know ourselves.

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### Engagement

**How will we leverage participation and attention?**

Engagement ranges from long-duration relationships (like sales conversations) to short moments of passing interaction. Continuing advances in fields such as neuroscience and psychology, new insights into how we experience our engagement is leveraged for more.

- **Persuasive objects and environments:** Machine learning can create new persuasive contexts through object behavior and digital interactions.
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### Fun

**How will we pursue imagination and explore ourselves?**

We each define fun differently, from passive entertainment to kinetic, suspenseful, and explorative. The ability to anticipate what any person might find fun—and embed such experiences into the world around us—will continue to drive innovative approaches to creating fun moments in our day.

- **Engagement:** How will we engage in new kinds of entertainment—ranging from immersive to explorative experiences?
- **Fun:** How will we pursue imagination and explore ourselves?