

DEMOCRATIZED STARTUP

Transformational investment strategies and open access to startup knowledge, expertise, and networks will seed an explosion of disruptive social innovations.

HIGH-FIDELITY LIVING

As big data floods human sensemaking capacities, cognitive assistants and contextual feedback systems will help people target precisely their interactions with the world.

DE-INSTITUTIONALIZED PRODUCTION

Activity of all sorts will be increasingly independent of institutions as contributions become more ad-hoc, dynamic, and networked.

CUSTOMIZABLE VALUE WEBS

Innovative, open business models will leverage complex networks of assets and relationships to create ultra-customer-centric experiences across industries.

SHAREABLE CITIES

Next gen cities will drive social innovation, with urban infrastructure shaped by patterns of human connection and contribution.

Demystifying the Startup

The building blocks of entrepreneurship and the makings of viable startups are being decoded and shared broadly, increasing entrepreneurs' chances for success.

- **Startup Genome Compass** – Helps entrepreneurs manage early-stage decisions by providing a diagnostic tool informed by factors known to affect startup success. startupcompass.co
- **The Lean Startup Movement** – Launched a revolution in the startup world by codifying the lore of startup success into a manageable process. theleanstartup.com
- **Ed Startup 101** – Introduces educators and educational researchers to entrepreneurship and intrapreneurship. edstartup.net

Matchmaking Networks

New social, financial, and networking platforms will create entrepreneurial communities that connect education entrepreneurs with funders and market opportunities.

- **FounderDating Education** – Jump starts edtech ventures by matching edtech startup talent with educators. founderdating.com/founderdating-education
- **Education Innovation Summit** – Brings together educators, technologists, funders, investors, and edtech startups. edinnovation.asu.edu
- **Imagine K12** – Leverages public-private partnerships to enable quick responses to the most promising technological, pedagogical, and market opportunities. imaginek12.com

Transformational Capital

Innovative public, private, and institutional investment mechanisms will maximize social benefit and collective impact as well as economic return.

- **Social Impact Bonds** – Give investors a return when specified social good outcomes are achieved. socialfinance.org.uk/sib
- **HIP Investor** – Supports impact investing that combines human impact with profit, rating portfolio holdings by positive impact. hipinvestor.com
- **Upstart** – Matches recent college grads with the right backers to provide them with the economic freedom to follow their true passions. upstart.com

Opportunity
Watch for administrators to become district and regional innovation portfolio managers who break new ground to meet the needs of all learners by strategically allocating time, resources, and energy to local and global initiatives with different levels of risk and reward.

Challenge
With an influx of new participants from other fields, leaders of the learning ecosystem will need to monitor potentially competing priorities to ensure that student learning remains the central focus and that innovations reflect the best current thinking about learning.

Digitized Decisions

Highly sophisticated learning analytic tools will integrate multiple data streams about learners, including their social and emotional conditions, to predict performance and suggest personalized strategies for success.

- **Algorithmic Ecosystems** – Describes how machines will help humans scan streams of information that are too fast for us to read and process. youtube.com/watch?v=V43a-KxLFcg
- **Knewton** – Combines a multitude of data points and sophisticated algorithms with user-selected content to recommend the ideal learning experience for each student. knewton.com
- **Desire2Learn** – Uses a blend of socio-demographic data and activity-related indicators to predict learners' performance and to identify appropriate interventions and support. desire2learn.com

Extended Self

In augmenting human capacity to think and do, the use of cognitive prosthetics and social bots will become the norm for making sense of information and will blur the line between individuals and their tools and networks.

- **Outsourcing Memory** – Research suggests that we are outsourcing personal knowledge acquisition to search engines, simply remembering where the information can be found. news.columbia.edu/googlememory
- **Web Ecology Project** – Teams compete to control user accounts on Twitter using social bots, influencing an unsuspecting cluster of 500 online users to do their bidding. webecologyproject.org/2011/01/help-robots-take-over-the-internet-the-socialbots-2011-competition
- **"Collaborations with My Other Self"** – Artist Harold Cohen collaborates with a computer program called AARON to produce paintings that have been exhibited in major art spaces worldwide. calit2.net/newsroom/article.php?id=1919

Reading Your Mind

Sophisticated decryption of brain signals under varying environmental conditions and during different cognitive tasks will improve the design of learning environments and experiences for attention, focus, creativity, and motivation.

- **NeuroFocus** – Uses brain wave monitoring in place of language-based focus groups to gain insight into responses and decisions regarding consumer goods. neurofocus.com
- **Tactile Tactics** – Focuses on how the unconscious perception of our physical and material environment, including texture, color, weight, and other physical qualities, influences our thinking. news.harvard.edu/gazette/story/2010/06/how-touch-can-influence-judgments
- **Picturing Thought** – Researchers at Princeton University use imaging technology to predict what people are thinking based on images of their brains. psych.princeton.edu/psychology/research/haxby/case.php

Opportunity
Watch for massive data sets, learning analytics, and dashboards to enable radically and continuously personalized learning for all learners based on their performance and motivation.

Challenge
Interventions based on automated alerts and signals could create data blindness by reducing human intuition and limiting insight; to the extent that automation correlates with lower cost, this risk could be especially pronounced in low-income communities.

The Rise of Socialstructs

Radically expanded options to architect massive collaborations in diverse technical and social settings will open new opportunities for creating, scaling, and sustaining efforts that both supplement and supplant traditional organizational models.

- **Time Banks** – Build community economies through the exchange of time and talent. Members of Hour Exchange Portland have swapped over 150,000 hours of service and have provided over 25,000 hours of free health care. hourexchangeportland.org
- **Tilt: Flip's Adventure in 1.5 Dimensions** – Players around the world work together in this game app to earn points to plant trees in Madagascar. tiltworld.com/game.info.html
- **The Public School** – Provides a framework for anyone to socialstruct learning by proposing and organizing classes with other self-directed learners. thepublicschool.org

The Decline of the FTE

Full-time employment in a single institution or industry will decline as social production networks aggregate contributions from volunteers and pay-for-performance workers around the world.

- **SamaSource** – Connects women and youth living in poverty with dignified microwork via the Internet. samasource.org
- **oDesk** – Facilitates hiring and managing ad hoc professional task workers across the globe. odesk.com
- **PresenceLearning** – In response to a national shortage, distributes access to qualified speech and language professionals in high-need areas through virtual technologies. presencelearning.com

DIY Credentialing

The increasing necessity of self-directed lifelong learning will make flexible credentials meaningful and will drive new tools and practices for communicating accomplishments.

- **Tappestry** – Helps users track what they have learned, catalog it, and share it to create an informal learning community. itunes.apple.com/us/app/tappestry/id533195694?mt=8
- **Degreed** – Scores and validates lifelong education from both accredited and non-accredited sources, enabling users to demonstrate mastery across learning experiences. degreed.com/about
- **Pathbrite** – Lets people collect, track, and share a lifetime of experiences via digital portfolios in pursuit of dream schools, internships, or careers. pathbrite.com

Opportunity
Watch for schools to access specialized services and talent from global networks, creating new differentiated roles for "in-house" learning agents and setting higher standards for both learning agents and learning resources.

Challenge
In a world with wide-ranging learning options, new and varied credentials, and continuously changing demands, identifying essential knowledge and skills will be increasingly complex.

Digital Mediators and Brokers

Web service brokers, interactive maps, APIs, and technical standards will become essential tools for helping learning agents, learners, and parents find, organize, and curate learning resources and experiences.

- **Aristotle Circle** – Matches pre-K to career learners and their parents with the appropriate coaching, mentoring, and preparation. aristotlecircle.com
- **Shared Learning Collaborative** – Supports personalized learning for all K-12 students by building an integrated and scalable technology infrastructure that links to the Common Core State Standards. slcedu.org
- **LearningJar** – Helps users understand the skills needed for specific roles and careers, learn informally, and then prove mastery. learningjar.com

Agile Schools

As the costs of coordinating learning resources and convening learning communities decline rapidly, diverse and flexible forms of hyper-focused schools will multiply.

- **PlayMaker School** – Middle school students learn through play, making, discovery and inquiry, and interest-driven design, with each student charting his or her own unique journey through the school year from an Adventure Map. gamedesk.org/playmaker-school
- **Knowmia** – Creates personalized mini-courses for high school students, with expert teachers assembling video lessons for individuals. knowmia.com/home/minicourseSignup
- **Open Learning Exchange (OLE)** – In response to the millennial goal of universal basic education, offers a modular school in a kit for creating a school anywhere with Internet access. ole.org

Transmedia Learning Productions

Like Hollywood production teams, transmedia learning networks and free platforms will provide access to celebrity learning agents, offer compelling curriculum, and structure vibrant blockbuster learning environments that integrate multiple digital media formats.

- **Rock Star Teachers** – At no cost to their students, Sebastian Thrun, Gautam Kaul, Sal Khan, and others reach hundreds of thousands of students with world-class learning experiences of high production value. coursera.org/course/introfinance
- **Fluid Environments** – Shows how transmedia creates seamless connections among new online tools and technologies and traditional books and web-based resources to bring curriculum alive to learners. eduscapes.com/fluid/4a.html
- **TED-Ed: Lessons Worth Sharing** – Supports educators in "flipping" high-quality videos to create interactive learning experiences. ed.ted.com/lessons/introducing-ted-ed-lessons-worth-sharing

Opportunities
Watch for schools to create distinct value propositions and identities and to partner with other organizations as part of complex value webs that offer personalized learning for all students.

Challenge
If inertia prevents today's public education system from responding constructively to disruptions, students, parents, and learning agents will create alternative value webs that may or may not be accessible to all.

Context-Aware Cities

Networks, apps, and other platforms will provide real-time feedback to residents, improving their access to services while helping to integrate urban structures and solutions both locally and regionally.

- **LIVE Singapore!** – Gives data back to residents as they generate it through their actions, allowing them to be more in sync with their environment and to make decisions that reflect the actual state of the city. senseable.mit.edu/livesingapore
- **MatchingMarkets** – Mobile network of street vendors uses real-time communication to optimize distribution, increase awareness of local products, respond to seasonal activity patterns, and strengthen connections between local food supply and demand. senseable.mit.edu/matchingmarkets
- **Forage Tracking** – In the absence of a formal recycling system, uses location-detecting hardware and software along with participatory platforms to help informal recyclers organize their activities and connect their cooperative to citizens. senseable.mit.edu/foragetracking

Hacking the City

As state, regional, and federal supports lag behind urban needs, local and collaborative activity will drive urban innovation, revitalization, and micro economies from the ground up.

- **Shareable Cities** – Online magazine and community blog supports the sharing of projects, tools, and approaches for bringing open source, collaborative problem solving and crowdsourcing to cities across the US. shareable.net/channel/cities
- **San Francisco Great Streets Project** – Planning department creates more public space by supporting citizen development of parklets in parking spots. sfgreatstreets.org/parklets
- **Artisanal Manufacturing** – Former industrial-scale factory in Brooklyn now houses several dozen small factories, each with a niche clientele in local markets. nytimes.com/2012/08/08/nyregion/small-factories-thrive-in-brooklyn-replacing-industrial-giants.html?_r=3&pagewanted=all

Inside-Out Urban Schools

Close partnerships and data sharing with civic organizations will create robust urban learning landscapes that weave learning throughout the community, expanding and integrating access to learning resources.

- **Hive Learning Network** – Leverages community organizations and mentors to distribute learning beyond the classroom and across networks of libraries, museums, science centers, and art studios. hivelearningnetwork.org
- **Expanded Schools** – Expand the time and scope of school by partnering with AmeriCorps volunteers and community organizations to create an immersive school day. tascorp.org/section/what_we_do/develop_program_models
- **Y-PLAN** – Engages young people as agents of change who collaborate with college mentors and adult allies to plan for real changes in their schools, neighborhoods, and cities. citiesandschools.berkeley.edu/engaging.html

Opportunity
Watch for learning resources and experiences to meld with other city services and infrastructures, such that urban indices rank cities by their learning landscapes, driving urban reinvention.

Challenge
As learning becomes networked across city spaces and organizations, learning agents will need to ensure that all learners have access to the same range of services and that those services and their providers are of the highest quality.

Key ● Disruptions are major societal shifts that will have broad impact on the future of learning.

◉ Trends are more narrowly focused changes that, when combined, give rise to disruptions.

○ Signals are examples, or early indicators, of how each trend is beginning to play out today.

Five Disruptions That Will Change Everything