

# SPEED

Year of report	MIT		Category							Enabler					
	Tech	Summary	IoT	AI	CLOUD	MOBILITY	BC	AR/VR	RPA	3D/Aman	QC	Processing Power	Price	Miniaturization	ICT
2010	Real-Time Search	Google is mining social networks to generate up-to-the-second search results.		1	1							1			1
	Social TV	Relying on relationships to rebuild TV audiences.													
	Mobile 3D	Smart phones will take 3-D mainstream.													
	Green Concrete	Storing carbon dioxide in cement.													
	Engineered Stem Cells	Mimicking human disease in a dish.													
	Implantable Electronics	Dissolvable devices make better medical implants.													
	Solar Fuel	Designing the perfect renewable fuel.													
2011	Dual-Action Antibodies	Fighting cancer more efficiently.													
	Light-trapping Photovoltaics	Nanoparticles boost solar power's prospects.													
	Cloud Programming	A new language will improve online applications.				1							1		1
	Social Indexing	Facebook remaps the Web to personalize online services		1	1							1			1
	Homomorphic Encryption	Making cloud computing more secure													
	Smart Transformers	Controlling the flow of electricity to stabilize the grid													
	Cloud Streaming	Bringing high-performance software to mobile devices			1	1						1	1		1
2012	Gestural Interfaces	Controlling computers with our bodies	1	1		1						1		1	1
	Crash-Proof Code	Making critical software safer													
	Cancer Genomics	Deciphering the genetics behind the disease													
	Separating Chromosomes	A more precise way to read DNA will change how we treat disease													
	Solid-State Batteries	High-energy cells for cheaper electric cars													
	Synthetic Cells	Designing new genomes could speed the creation of vaccines and biofuel-producing bacteria													
	Egg Stem Cells	A recent discovery could increase older women's chances of having babies.													
2013	A Faster Fourier Transform	A mathematical upgrade promises a speedier digital world.													
	Ultra-Efficient Solar	Under the right circumstances, solar cells from Semprius could produce power more cheaply than fossil fuels.													
	Nanopore Sequencing	Simple and direct analysis of DNA will make genetic testing routine in more situations.													
	Light-Field Photography	Lytro reinvented the camera so that it can evolve faster.													
	Crowdfunding	Kickstarter is funding the commercialization of new technologies.													
	Solar Microgrids	Village-scale DC grids provide power for lighting and cell phones.													
	High-Speed Materials Discovery	A new way to identify battery materials suitable for mass production could revolutionize energy storage.													
2014	3-D Transistors	Intel creates faster and more energy-efficient processors.													
	Facebook's Timeline	The social-networking company is collecting and analyzing consumer data on an unprecedented scale.		1	1							1			1
	Smart Watches	The designers of the Pebble watch realized that a mobile phone is more useful if you don't have to take it out of your pocket.	1	1	1	1						1	1	1	1
	Ultra-Efficient Solar Power	Doubling the efficiency of solar devices would completely change the economics of renewable energy. Here is a design that just might make it possible.													
	Memory Implants	A maverick neuroscientist believes he has deciphered the code by which the brain forms long-term memories.													
	Prenatal DNA Sequencing	Reading the DNA of fetuses is the next frontier of the genome revolution. Do you really want to know the genetic destiny of your unborn child?													
	Deep Learning	With massive amounts of computational power, machines can now recognize objects and translate speech in real time. Artificial intelligence is finally getting smart.		1	1							1	1		1
2015	Additive Manufacturing	GE, the world's largest manufacturer, is on the verge of using 3-D printing to make jet parts.								1		1	1		1
	Big Data from Cheap Phones	Collecting and analyzing information from simple cell phones can provide surprising insights into how people move about and behave—and even help us understand the spread of diseases.	1	1	1	1						1	1	1	1
	Temporary Social Media	Messages that quickly self-destruct could enhance the privacy of online communication and make people feel freer to be spontaneous.													
	Supergrids	A high-power circuit breaker could finally make DC power grids practical.													
	Baxter: The Blue-Collar Robot	Rethink Robotics' new creation is easy to interact with, but the innovations behind the robot show just how hard it is to get along with people.													
	Agricultural Drones	Relatively cheap drones with advanced sensors and imaging capabilities are giving farmers new ways to increase yields and reduce crop damage.	1	1	1	1			1			1	1	1	1
	Ultraprivate Smartphones	New models built with security and privacy in mind reflect the Zeitgeist of the Snowden era.													
2016	Brain Mapping	A new map, a decade in the works, shows structures of the brain in far greater detail than ever before, providing neuroscientists with a guide to its immense complexity.													
	Neuromorphic Chips	Microprocessors configured more like brains than traditional chips could soon make computers far more astute about what's going on around them.	1	1		1						1	1	1	1
	Genome Editing	The ability to create primates with intentional mutations could provide powerful new ways to study complex and genetically baffling brain disorders.													
	Microscale 3-D Printing	Inks made from different types of materials, precisely applied, are greatly expanding the kinds of things that can be printed.								1			1		1
	Mobile Collaboration	The smartphone era is finally getting the productivity software it needs.	1		1	1						1	1	1	1
	Oculus Rift	Thirty years after virtual-reality goggles and immersive virtual worlds made their debut, the technology finally seems poised for widespread use.				1	1		1			1		1	1
	Agile Robots	Computer scientists have created machines that have the balance and agility to walk and run across rough and uneven terrain, making them far more useful in navigating human environments.	1	1					1			1	1	1	1
2017	Smart Wind and Solar Power	Big data and artificial intelligence are producing ultra-accurate forecasts that will make it feasible to integrate much more renewable energy into the grid.	1	1	1							1	1	1	1
	Magic Leap	A startup is betting more than half a billion dollars that it will dazzle you with its approach to creating 3-D imagery.						1				1	1	1	1
	Nano-Architecture	A Caltech scientist creates tiny lattices with enormous potential.													
	Car-to-Car Communication	A simple wireless technology promises to make driving much safer.	1	1	1	1						1	1	1	1
	Project Loon	Billions of people could get online for the first time thanks to helium balloons that Google will soon send over many places cell towers don't reach.													
	Liquid Biopsy	Fast DNA-sequencing machines are leading to simple blood tests for cancer.													
	Megascale Desalination	The world's largest and cheapest reverse-osmosis desalination plant is up and running in Israel.													
2018	Apple Pay	A clever combination of technologies makes it faster and more secure to buy things with a wave of your phone.	1		1	1						1	1	1	1
	Brain Organoids	A new method for growing human brain cells could unlock the mysteries of dementia, mental illness, and other neurological disorders.													
	Supercharged Photosynthesis	Advanced genetic tools could help boost crop yields and feed billions more people.													
	Internet of DNA	A global network of billions of genomes could be medicine's next great advance.													
	Immune Engineering	Genetically engineered immune cells are saving the lives of cancer patients. That may be just the start.													
	Precise Gene Editing in Plants	CRISPR offers an easy, exact way to alter genes to create traits such as disease resistance and drought tolerance.													
	Conversational Interfaces	Powerful speech technology from China's leading Internet company makes it much easier to use a smartphone.	1	1		1						1	1	1	1
2019	Reusable Rockets	Rockets typically are destroyed on their maiden voyage. But now they can make an upright landing and be refueled for another trip, setting the stage for a new era in spaceflight.													
	Robots That Teach Each Other	What if robots could figure out more things on their own and share that knowledge among themselves?		1	1	1			1			1	1		1
	DNA App Store	An online store for information about your genes will make it cheap and easy to learn more about your health risks and predispositions.													
	SolarCity's Gigafactory	A \$750 million solar facility in Buffalo will produce a gigawatt of high-efficiency solar panels per year and make the technology far more attractive to homeowners.													
	Slack	A service built for the era of mobile phones and short text messages is changing the workplace.													
	Tesla Autopilot	The electric-vehicle maker sent its cars a software update that suddenly made autonomous driving a reality.	1	1	1	1						1	1	1	1
	Power from the Air	Internet devices powered by Wi-Fi and other telecommunications signals will make small computers and sensors more pervasive.	1		1	1						1		1	1
2020	Reversing Paralysis	Scientists are making remarkable progress at using brain implants to restore the freedom of movement that spinal cord injuries take away.													
	Self-Driving Trucks	Tractor-trailers without a human at the wheel will soon barrel onto highways near you. What will this mean for the nation's 1.7 million truck drivers?	1	1	1							1	1	1	1
	Paying with Your Face	Face-detecting systems in China now authorize payments, provide access to facilities, and track down criminals. Will other countries follow?	1	1	1	1						1	1	1	1
	Practical Quantum Computers	Advances at Google, Intel, and several research groups indicate that computers with previously unimaginable power are finally within reach.									1	1	1	1	1
	The 360-Degree Selfie	Inexpensive cameras that make spherical images are opening a new era in photography and changing the way people share stories.													
	Hot Solar Cells	By converting heat to focused beams of light, a new solar device could create cheap and continuous power.													
	Gene Therapy 2.0	Scientists have solved fundamental problems that were holding back cures for rare hereditary disorders. Next we'll see if the same approach can take on cancer, heart disease, and other common illnesses.													
2021	The Cell Atlas	Biology's next mega-project will find out what we're really made of.													
	Botnets of Things	The relentless push to add connectivity to home gadgets is creating dangerous side effects that figure to get even worse.	1		1	1						1		1	1
	Reinforcement Learning	By experimenting, computers are figuring out how to do things that no programmer could teach them.		1	1							1			1
	3-D Metal Printing	Now printers can make metal objects quickly and cheaply.								1		1	1		1
	Artificial Embryos	Without using eggs or sperm cells, researchers have made embryo-like structures from stem cells alone, providing a whole new route to creating life.													
	Sensing City	A Toronto neighborhood aims to be the first place to successfully integrate cutting-edge urban design with state-of-the-art digital technology.	1	1	1	1						1	1	1	1
	AI for Everybody	Cloud-based AI is making the technology cheaper and easier to use.		1	1	1						1	1	1	1
2022	Dueling Neural Networks	Two AI systems can spar with each other to create ultra-realistic original images or sounds, something machines have never been able to do before.		1	1							1			1
	Babel-Fish Earbuds	Near-real-time translation now works for a large number of languages and is easy to use.		1	1	1						1	1	1	1
	Zero-Carbon Natural Gas	A power plant efficiently and cheaply captures carbon released by burning natural gas, avoiding greenhouse-gas emissions.													
	Perfect Online Privacy	Computer scientists are perfecting a cryptographic tool for proving something without revealing the information underlying the proof.													
	Genetic Fortune-Telling	Scientists can now use your genome to predict your chances of getting heart disease or breast cancer, and even your IQ.													
	Materials' Quantum Leap	IBM has simulated the electronic structure of a small molecule, using a seven-qubit quantum computer.									1	1	1		1