

Prediction	Right	Part right, part wrong	Will happen later	Wrong because needlessly specific / right in spirit, wrong in specifics	Wrong	Will probably never be 100% right	Impossible to judge accurately / Unclear	Overtaken by other tech	Notes
"People read documents either on the hand-held displays or, more commonly, from text that is projected into the ever present virtual environment using the ubiquitous direct-eye displays. Paper books and documents are rarely used or accessed."		x	x			x			Direct-eye displays won't replace screens and paper as the primary media for reading written text for many decades. It might even turn out that people prefer reading electronic text on flat screen devices they can hold at arm's length, as opposed to seeing it hover in front of them thanks to AR glasses. Also, I doubt paper will ever become obsolete.
"Most twentieth-century paper documents of interest have been scanned and are available through the wireless network."	x								
"Most learning is accomplished using intelligent software-based simulated teachers. To the extent that teaching is done by human teachers, the human teachers are often not in the local vicinity of the student. The teachers are viewed more as mentors and counselors than as sources of learning and knowledge."			x		x				Als will ultimately replace human teachers, just as they will replace us in all other jobs. However, I don't expect a machine to be as good as a below-average human teacher until the 2030s.
"Students continue to gather together to exchange ideas and to socialize, although even this gathering is often physically and geographically remote."	x								
"All students use computation. Computation in general is everywhere, so a student's not having a computer is rarely an issue."		x	x						If it weren't for parents who are technophobes and/or who deprive their children of basic needs, the Western world would have achieved this milestone by 2019. Even in 2029, there will be a non-trivial minority of students who lack reasonable computer and internet access due to their parents.
"Most adult human workers spend the majority of their time acquiring new skills and knowledge."					x	x			If competition gets so fierce and technology starts changing so rapidly that humans must spend most of their time acquiring new skills and knowledge just to keep their jobs or to be ready to climb the next rung of the skill ladder before their current jobs disappear, I think most humans will drop out of the work force. They will vote to raise taxes on the productive people, companies and machines, and redistribute it as UBI and other welfare benefits. I think the 2050s is the earliest the balance could tip, and we could see such an arrangement arise.
"Blind persons routinely use eyeglass-mounted reading-navigation systems, which incorporate the new, digitally controlled, high-resolution optical sensors. These systems can read text in the real world, although since most print is now electronic, print-to-speech reading is less of a requirement. The navigation function of these systems, which emerged about ten years ago, is now perfected. These automated reading-navigation assistants communicate to blind users through both speech and tactile indicators. These systems are also widely used by sighted persons since they provide a high-resolution interpretation of the visual world."		x	x						AR glasses with these capabilities will probably exist by 2029.
"Retinal and vision neural implants have emerged but have limitations and are used by only a small percentage of blind persons."		x	x						The implants of 2019 didn't seem to be as good as Kurzweil predicted. Cybernetic implants that enhance vision and the other senses to superhuman levels won't start becoming common until the end of this century.
"Deaf persons routinely read what other people are saying through the deaf persons' lens displays."		x	x						Affordable AR glasses with these capabilities will probably exist by 2029.
"There are systems that provide visual and tactile interpretations of other auditory experiences such as music, but there is debate regarding the extent to which these systems provide an experience comparable to that of a hearing person."	x								
"Cochlear and other implants for improving hearing are very effective and are widely used."	x								
"Paraplegic and some quadriplegic persons routinely walk and climb stairs through a combination of computer-controlled nerve stimulation density and exoskeletal robotic devices."			x		x				The exoskeletons won't be ready until the 2050s. Patents need to expire and, above all, battery energy density needs to improve a lot.
"Generally, disabilities such as blindness, deafness, and paraplegia are not noticeable and are not regarded as significant."					x				AR glasses and other body-worn technologies will make blindness and deafness much less burdensome over the next 20 years by interpreting the disabled person's surroundings for them and helping them to communicate. As noted, the exoskeletons won't be around until the 2050s.
"You can do virtually anything with anyone regardless of physical proximity. The technology to accomplish this is easy to use and ever present."		x							
"'Phone' calls routinely include high-resolution three-dimensional images projected through the direct-eye displays and auditory lenses."			x		x	x			AR glasses and other tech should let anyone do fully convincing "holographic calls" with anyone else in 10-20 years. However, voice-only calls and text messages will never die out.
"Three-dimensional holography displays have also emerged. In either case, users feel as if they are physically near the other person. The resolution equals or exceeds optimal human visual acuity. Thus a person can be fooled as to whether or not another person is physically present or is being projected through electronic communication."		x	x						As above, it will take another 10-20 years for this to be possible courtesy of eyewear. However, holographic, volumetric displays (without needing eyewear, you see 3D digital objects floating in the middle of your living room) will take longer to reach the standard described in the prediction, and face much tougher challenges than eyewear tech.
"Routinely available communication technology includes high-quality speech-to-speech language translation for most common language pairs."		x	x						The "high quality" level will be reached by 2029.
"Reading books, magazines, newspapers, and other web documents, listening to music, watching three-dimensional moving images (for example, television, movies), engaging in three-dimensional visual phone calls, entering virtual environments (by yourself, or with others who may be geographically remote), and various combinations of these activities are all done through the ever present communications Web and do not require any equipment, devices, or objects that are not worn or implanted."		x	x						Virtual reality technology will reach this level by 2029.
"The all-enveloping tactile environment is now widely available and fully convincing. Its resolution equals or exceeds that of human touch and can simulate (and stimulate) all the facets of the tactile sense, including the senses of pressure, temperature, textures, and moistness...the 'total touch' haptic environment requires entering a virtual reality booth."			x		x				The underdeveloped nature of this technology and the lack of any clear trends mean it will not reach the described level of sophistication for decades. Only after the audiovisual aspects of virtual reality have been perfected and VR gaming becomes widespread, which should both happen during the 2030s, will attention will turn towards completing the virtual experience by developing technologies to interface with the other senses. Don't expect "VR catsuits" and "VR booths" until the middle of this century. The desirability of being able to feel sensations in VR, like extreme heat or cold and pain from bullet impacts and falling from a height, is also questionable.

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"These technologies are popular for medical examinations, as well as sensual and sexual interactions..."			x		x				As above, it won't happen until the middle of this century. Yes, it will someday be possible for a person to put on their VR catsuit and be "remotely touched" by someone else. The other person would have their own devices that would give them accurate tactile feedback as they made contact. Having an accurate simulacrum of sexual intercourse would require more advanced tech and a more complicated setup.
"Rapid economic expansion and prosperity has continued."		x							
"The vast majority of transactions include a simulated person, featuring a realistic animated personality and two-way voice communication with high-quality natural-language understanding."					x	x			Humans have shown a preference for online transactions that are as fast as possible and involve no agents at all. Just click the "Buy" button. Even advanced "simulated people" that can understand spoken language well are generally considered annoying.
"Often, there is no human involved, as a human may have his or her automated personal assistant conduct transactions on his or her behalf with other automated personalities. In this case, the assistants skip the natural language and communicate directly by exchanging appropriate knowledge structures."		x				x			Unlikely that humans will trust their personal machines enough to let them make unsupervised purchases on a routine basis for many decades, if ever.
"Household robots for performing cleaning and other chores are now ubiquitous and reliable."		x	x						The prediction won't be fully right until the 2030s.
"Automated driving systems have been found to be highly reliable and have now been installed in nearly all roads. While humans are still allowed to drive on local roads (although not on highways), the automated driving systems are always engaged and are ready to take control when necessary to prevent accidents."					x			x	While it would be very helpful if governments invested in roadside guidance stations, it isn't necessary; self-driving cars can navigate effectively using GPS and their onboard computers and sensors.
"Efficient personal flying vehicles using microflaps have been demonstrated and are primarily computer controlled."					x		x		
"There are very few transportation accidents."			x		x				Once everyone is riding in autonomous vehicles, accidents will, on a per-mile/kilometer basis, become "very few" compared to 2019. A significant increase in road transit safety due to this should be evident in the 2040s and only grow with time.
"People are beginning to have relationships with automated personalities as companions, teachers, caretakers, and lovers."			x		x				"Virtual people" should act similar enough to humans for this to be true starting in the 2030s. The romance from the movie "Her" should be possible then. However, we won't be able to put those virtual people into convincing android bodies to interact with us in the real world until late this century.
"An undercurrent of concern is developing with regard to the influence of machine intelligence. There continue to be differences between human and machine intelligence, but the advantages of human intelligence are becoming more difficult to identify and articulate. Computer intelligence is thoroughly interwoven into the mechanisms of civilization and is designed to be outwardly subservient to apparent human control. On the one hand, human transactions and decisions require by law a human agent of responsibility, even if fully initiated by machine intelligence. On the other hand, few decisions are made without significant involvement and consultation with machine-based intelligence."		x	x						By the 2050s, the last sentence of the prediction will be true. The words of my own prediction: "Humans will be heavily dependent upon their machines for almost everything (e.g. – friendship, planning the day, random questions to be answered, career advice, legal counseling, medical checkups, driving cars), and the dependency will be so ingrained that humans will reflexively assume that 'The Machines are always right.'"
"Public and private spaces are routinely monitored by machine intelligence to prevent interpersonal violence."		x	x						Real-time, automated identification of criminal acts from surveillance camera footage will be reliable and available by 2030.
"People attempt to protect their privacy with near-unbreakable encryption technologies, but privacy continues to be a major political and social issue with each individual's practically every move stored in a database somewhere."	x								
"The existence of the human underclass continues as an issue. While there is sufficient prosperity to provide basic necessities (secure housing and food, among others) without significant strain to the economy, old controversies persist regarding issues of responsibility and opportunity."	x								
"This issue is complicated by the growing component of most employment's being concerned with the employee's own learning and skill acquisition. In other words, the difference between those 'productively' engaged and those who are not is not always clear."		x							
"Virtual artists in all of the arts are emerging and are taken seriously. These cybernetic visual artists, musicians, and authors are usually affiliated with humans or organizations (which in turn are comprised of collaborations of humans and machines) that have contributed to their knowledge base and techniques. However, interest in the output of these creative machines has gone beyond the mere novelty of machines being creative."		x							This was close to being 100% right in 2019.
"Visual, musical, and literary art created by human artists typically involve a collaboration between human and machine intelligence."							x		
"The type of artistic and entertainment product in greatest demand (as measured by revenue generated) continues to be virtual-experience software, which ranges from simulations of 'real' experiences to abstract environments with little or no corollary in the physical world."					x				The VR format will come to dominate video gaming once the hardware gets better and cheaper. VR will go mainstream this decade, but it won't comprise >50% of the video game industry's revenue until the 2030s at the earliest. It will take additional decades for VR revenues to exceed that of all other entertainment sectors, chiefly sports. Note that there's a fair chance a large minority of gamers will prefer old-fashioned "2D" gaming on flat screens, perhaps because the VR gaming experience will be too overwhelming to them, or its side effects too unpleasant.
"The primary threat to [national] security comes from small groups combining human and machine intelligence using unbreakable encrypted communication. These include (1) disruptions to public information channels using software viruses, and (2) bioengineered disease agents."		x				x			COVID-19 has awakened the world, including bad actors, to the devastating potential of biological weapons, and it could become a much larger threat to global security in the medium term. That said, it's unlikely it will ever become the PRIMARY threat.
"Most flying weapons are tiny—some as small as insects—with microscopic flying weapons being researched."							x		

