Timelines

Below is a compact roadmap of key "future of AI" milestones, including AGI, ASI, Q-Day, and the Singularity, with rough timelines. All dates are *highly speculative* and depend heavily on definitions and assumptions; I'll flag where these come from.

1. Quick definitions

- **AGI (Artificial General Intelligence)**

  AI that can perform *at least as well as a typical skilled human* across most cognitively-demanding tasks, not just narrow ones.

- **ASI (Artificial Superintelligence)**

  AI that is *vastly better than the best humans* across virtually all domains (science, strategy, engineering, persuasion, etc.).

- **Q-Day (a.k.a. Y2Q)**

  The point where a **cryptographically relevant quantum computer** can reliably break today's main public-key cryptosystems (RSA, ECC), forcing a global move to post-quantum crypto. Most experts place this in the **2030s or later** Palo Alto Networks, Secureworks.

- **Technological Singularity**

  A (hypothetical) period when self-improving AI leads to *runaway* intelligence growth and social/economic change so rapid that our current models of "progress per year" break down. Often associated with the moment ASI emerges and starts rapid recursive self-improvement.

- **HLMI / "High-Level Machine Intelligence"**

  Survey term roughly overlapping with "AGI": when machines can perform *every* task better and more cheaply than humans AI Impacts surveys summarized in AI Multiple.

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2. Milestones in rough chronological order (with timelines)

For each milestone I give three bands:

- **Aggressive** – optimistic / short-timeline forecasts (Metaculus forecasters, some lab CEOs, entrepreneurs, etc.).
- **Central/survey** – roughly where large expert surveys cluster.
- **Conservative** – skeptical but still plausible later dates.

Table of major milestones

#	Milestone	What it roughly means	Aggressive window	Central / survey window	Conservative window
1	**“Advanced Narrow AI Saturation”**	AI beats most humans in many *digital* tasks (coding, writing, data analysis, many professional exams), but still not generally capable or autonomous. We are *already part-way* through this.	2020–2027 (ongoing)	2020–2030	2020–2040+
2	**“Weak / Proto-AGI” (Digital-only AGI)**	Systems that can perform *almost all computer-based knowledge work* at or above a skilled human level, but may lack robust physical-world competence, long-term autonomy, or deep causal understanding.	Late 2020s – early 2030s (some lab leaders talk about 2025–2028)	Early–mid 2030s	2040+
3	**Q-Day (crypto-breaking quantum computer)**	A quantum computer can reliably run something like Shor’s algorithm at scale, breaking RSA / ECC in realistic time, forcing global migration to post-quantum crypto Palo Alto Networks, Secureworks.	~2030 ± a few years (some detailed analyses argue ~2030–2032)	“2030s or later”; many expert reports cluster around **mid-2030s** with large uncertainty Palo Alto Networks	2040s+ (if scaling & error-correction are harder than expected)
4	**“Strong AGI / HLMI”**	AI can match or exceed humans in *essentially all*	Early 2030s (Metaculus medians for	2040–2060: multiple large surveys of	Late 2060s–22nd century or “never” (a

#	Milestone	What it roughly means	Aggressive window	Central / survey window	Conservative window
		economically relevant tasks, including research, strategy, engineering, and management. Close to the "HLMI" definition used in large expert surveys AI Impacts / AI Multiple.	"AGI" are around 2030–2035; some CEOs talk about 2026–2035)	thousands of AI researchers put 50% HLMI between **~2040 and ~2060** AI Multiple	minority view in surveys)
5	**"Full Automation of Most Labor"**	>90% of current economically valuable tasks can be done by machines as cheaply and well as humans (not the same as no humans working, but human labor is technologically obsolete in most sectors). Several surveys ask about this explicitly.	Late 2030s–2040s (if AGI arrives early and is rapidly deployed into robots, logistics, factories, etc.)	2050s–2070s (experts often put "full automation of labor" a few decades *after* AGI/HLMI AI Multiple)	After 2100 or never fully complete
6	**Onset of Recursive Self-Improvement**	AI systems that can substantially and autonomously improve *their own* architectures, training curricula, hardware use, etc., with minimal human	Could happen **within a few years of practical AGI**, so anything from mid-2030s onward in short-timeline views	2050s+ (if AGI is slower to arrive and/or tightly constrained)	Maybe never in a runaway way (only controlled, gradual improvement)

#	Milestone	What it roughly means	Aggressive window	Central / survey window	Conservative window
		input—each generation making the next more capable.			
7	**ASI (Artificial Superintelligence)**	AI that is *far beyond* the best humans in essentially every cognitive domain, including long-term planning and scientific creativity. Many think this comes quickly once AIs can do cutting-edge AI research themselves.	Days–years after AGI: some argue ASI could follow within **months to a few years** once recursive self-improvement is possible. That puts ASI plausibly in the **2030s–2040s** under aggressive views.	A few decades after AGI: e.g., AGI in 2040s → ASI 2050s–2070s	"Not this century" or never (minority view)
8	**Technological Singularity**	The *macro-level* tipping point: AI-driven change becomes so fast and profound that year-to-year life becomes nearly unrecognizable by today's standards. Often associated with the emergence and rapid escalation of ASI.	~2030s–2040s: some entrepreneurs & futurists (e.g., Kurzweil revised his Singularity forecast from 2045 to **2032** AI Multiple)	2040s–2060s: if AGI / ASI are later and scaled more cautiously	"Never" / only a long, smooth transition (view that "singularity" is a misleading metaphor)

3. How these milestones can order themselves

Because the timelines are uncertain, the *ordering* of some events (especially Q-Day vs. AGI) could differ by scenario. Three illustrative possibilities:

Scenario A – "AI-First, Quantum Later" (AGI precedes Q-Day)

- 2020s: Advanced narrow AI, early "agentic" systems, copilots everywhere.
- **Late 2020s–early 2030s**: Proto-AGI able to do most digital work.
- **Early–mid 2030s**: Strong AGI/HLMI that can handle essentially all cognitive tasks.
- **Mid-2030s onward**: AI systems themselves accelerate quantum R&D; Q-Day lands in **late 2030s–2040s**.
- **2030s–2040s**: Recursive self-improvement + ASI + Singularity.

Here, humanity hits AGI first, and that *helps* build cryptographically relevant quantum computers.

Scenario B – "Quantum-First, AI Later" (Q-Day precedes clear AGI)

- 2020s: Quantum hardware grows; post-quantum standards get adopted.
- **Early–mid 2030s**: First practical CRQC → **Q-Day**; large-scale migration to post-quantum cryptography.
- **2040s–2050s**: Strong AGI/HLMI, then progressive automation of most labor.
- **Late 2050s–2070s**: ASI and possible Singularity.

This matches more *cautious* AGI timelines but relatively bullish quantum ones.

Scenario C – "Stacked Acceleration" (everything early)

- **Late 2020s**: Proto-AGI; significant portions of software, design, and research automated.
- **Around 2030**: Q-Day (per some analyses and roadmaps); aggressive but not impossible.
- **Early–mid 2030s**: Strong AGI widely deployed; AI helps complete post-quantum migration and designs better hardware.
- **Mid-2030s**: Onset of powerful recursive self-improvement; ASI appears.
- **2030s–2040s**: Singularity-like decade of very rapid change.

This is essentially the "fast takeoff" picture argued by some forecasters and entrepreneurs.

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4. Where these ranges actually come from

Very briefly:

- **AGI / HLMI surveys**

  Large expert surveys (NIPS/ICML authors, etc.) typically put a 50% chance of HLMI / AGI somewhere between **~2040 and ~2060** AI Multiple summary of 10+ surveys.

  More recent surveys show timelines *shortening* after rapid LLM progress, sometimes clustering around **~2040** for 50% HLMI.

- **Community forecasting**

  The Metaculus community (thousands of forecasters) has had medians around the **late 2020s–early 2030s for "weak AGI"** and ~**early 2030s for first AGI** AI Multiple.

- **Entrepreneurs and lab leaders**

  A number of prominent figures (Altman, Amodei, Musk, Son, Hassabis, etc.) have publicly suggested AGI/“singularity-like” systems could plausibly appear **this decade or the early 2030s** AI Multiple.

- **Singularity dates**

  Analyses that aggregate thousands of predictions find earlier academic estimates mostly in **2060+**, but more recent ones (especially from entrepreneurs) cluster between **~2030 and ~2045**, with Kurzweil now talking about **around 2032** rather than 2045 AI Multiple.

- **Q-Day**

  Security and quantum-risk reports generally put Q-Day in the **2030s or later**, with some detailed models pointing at ~**2030 ± a few years** as a plausible early arrival, and others pushing well into the 2040s Palo Alto Networks, Secureworks.