* Economists define technology as the way an organization produces outputs from inputs
* For businesses, selecting a technology is one element of choosing how to compete
* A technology strategy: an integrated set of choices about how to use new technology to produce superior financial returns in the long run. Whether introducing a new technology or responding to one developed by someone else, every firm needs a technology strategy
* For the strategist, what matters is technology change
* The essence of capitalism is the creation and destruction of businesses through revolutions in technology, which he famously called the process of creative destruction
* A “conventional” competitive strategy—one based on a company’s use of existing technologies
* Technology strategy, then, differs from “conventional” competitive strategy because it requires strategists to understand the competitive implications of using a new technology
* The choice about how to commercialize—make money from—a new technology is another important aspect of technology strategy
* the ecosystem—a set of mutually dependent suppliers, customers, and complementors that work together to create value.
* many new technologies cannot reach their potential—or create value for customers—on their own. To do so, they require complementary assets
* The importance of timing choices in technology strategy is magnified by increasing returns to scale, which exist when a firm’s profitability increases disproportionately with its customer base
* Economies of scale and network effects are two sources of increasing returns to scale
* Network effects mean that the value a customer can get from choosing a technology depends on how many others make the same choice. Both can create first-mover advantages
* the chicken-or-egg problem occurs when a new product relies on network effects for success but does not yet have the critical mass of users needed to pull in and retain new customers
* low switching costs—the cost to switch from one product to another
* low multihoming costs—the cost and effort required for a user to use multiple competing products or platforms
* standards war, in which firms with different product designs compete in a winner-takes-all battle to become the standard. In such situations, technology strategy involves choosing how to fight and win a standards war
* An innovator is a firm that introduces a new technology into a market. An innovator may be an existing firm or a startup, and it may target an existing market or an entirely new one
* An innovator’s technology strategy is influenced by two types of change: the evolution of the technology’s performance and the development of the market for the new technology
* the innovator’s strategy must answer three questions: • Does it work? • Who will adopt it? • How do I commercialize it (that is, make money from it)?
* After the technology has been commercialized, the strategic questions focus on the product market: • How will I grow the market? • How will I capture a share of the value?
* Table

  Description automatically generated
* it is critical to identify the technology risks and to devise inexpensive ways to reduce them, such as developing prototypes and conducting small-scale experiment
* Some successful innovators use a stealth approach, entering underserved or nontraditional markets rather than challenging powerful incumbents directly
* For innovators that are existing firms, markets where the firm can use its complementary assets represent attractive opportunities for the new technology
* Attacker’s advantage: where the incumbent does not control valuable complementary assets, there is no incentive for the innovator to cooperate. If the incumbent can exploit the idea, the innovator has an incentive to enter the market and attack the incumbent before the incumbent can copy the idea
* the way firms get paid—the revenue model
* freemium pricing models (in which a basic version is free but a version with extra features is not),
* complement pricing (in which a basic service is free but the firm charges for complementary goods or services)
* Early adopters are quick to see the potential benefits of a new technology
* The best way to cross the chasm is to seek to dominate a market niche