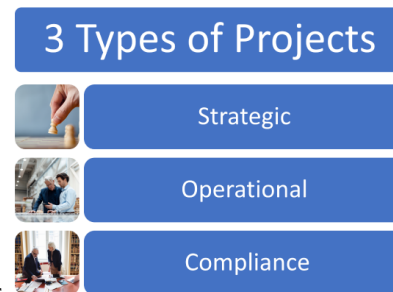


1.3: Types of Projects

There are three broad categories of projects to consider: Strategic Projects, Operational Projects, and Compliance Projects (Figure 1.1).

- **Strategic** Projects involve creating something new and innovative. A new product, a new service, a new retail location, a new branch or division, or even a new factory might be a strategic project because it will allow an organization to gain a strategic advantage over its competitors.
- **Operational** Projects improve current operations. These projects may not produce radical improvements, but they will reduce costs, get work done more efficiently, or produce a higher-quality product.
- **Compliance** Projects must be done in order to comply with an industry or governmental regulation or standard. Often there is no choice about whether to implement a project to meet a regulation, but there may be several project options to consider, any



of which would result in meeting compliance requirements.

Figure 1.1: Three broad categories of projects

Traditional Project Management

The concept of work was first studied in 1880 by Frederick Taylor, who was also the first to consider process design. While project management can be traced back to the building of the Great Pyramids in Egypt, it was really in the post-WW2 industrial boom of the 1950s that project managers started to develop the tools and techniques used in modern project management. In the 1950s we began to see project management concepts used to design the Polaris Missile. Henry Gantt's chart was created to manage Army Logistics and you could find War rooms with the Program Review Evaluation Technique (PERT) charts hanging from the walls. These tools were used to complete large industrial and military projects, where the scope of work (what we need to accomplish in a project) was well defined. For example, the scope of what we have to do can be planned out well when we are constructing an apartment building, making a nuclear submarine missile, or building an oil refinery.

These traditional techniques have been elaborated and standardized by organizations such as the Project Management Institute (PMI) in the US, The International Project Management Association (headquartered in Switzerland), and AXELOS (the organization behind the PRINCE2 certification used in Great Britain). These traditional techniques were also adapted to software development. Techniques such as **waterfall** (where phases are sequential) and **function point analysis** (a set of rules to measure functionality to users) were advanced as effective ways to manage software development projects. However, as the world of software development changed—from large, time-consuming projects that were loaded on mainframe computers to fast-moving, fast-changing, internet-based applications many programmers found waterfall and similar methods to be limiting. These techniques lacked flexibility and were inadequate to deal with a rapidly changing, competitive landscape. As a result, a “revolution” of sorts was mounted, and out of that revolution came several so-called Agile project management methods.

Agile Project Management

Agile is a broad term for project management techniques that are **iterative** in nature. Rather than trying to develop all aspects of a project or software application and then presenting that result to the customer after a long development cycle (6 to 24 months), Agile techniques use short development cycles in which features of high value are developed first and a working product/software can be reviewed and tested at the end of the cycle (20-40 days). Agile began with a manifesto. The Agile manifesto includes 4 main values: Individuals and interactions, working software, customer collaboration, and responding to change. Agile works well with very complex projects that have multiple deliverables. In a more traditional approach, change has to be managed and controlled. In an agile approach, change is encouraged and delivering value quickly is the main focus.

Imagine you waited in line to buy a new phone on its release date. You have all of your apps updated and are exploring the new functionality and a bug in the software was discovered. Now imagine waiting months to get that fixed. It would be unacceptable. When Google researchers discovered a vulnerability in Apple's software that was released in October 2023 exposing phones to a bug called Zero-Day, it took Apple under a week to fix the reported bug. Google had fixed their own Zero-Day vulnerability in Chrome in just 4 days. This is how quickly Agile project management techniques can work.

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