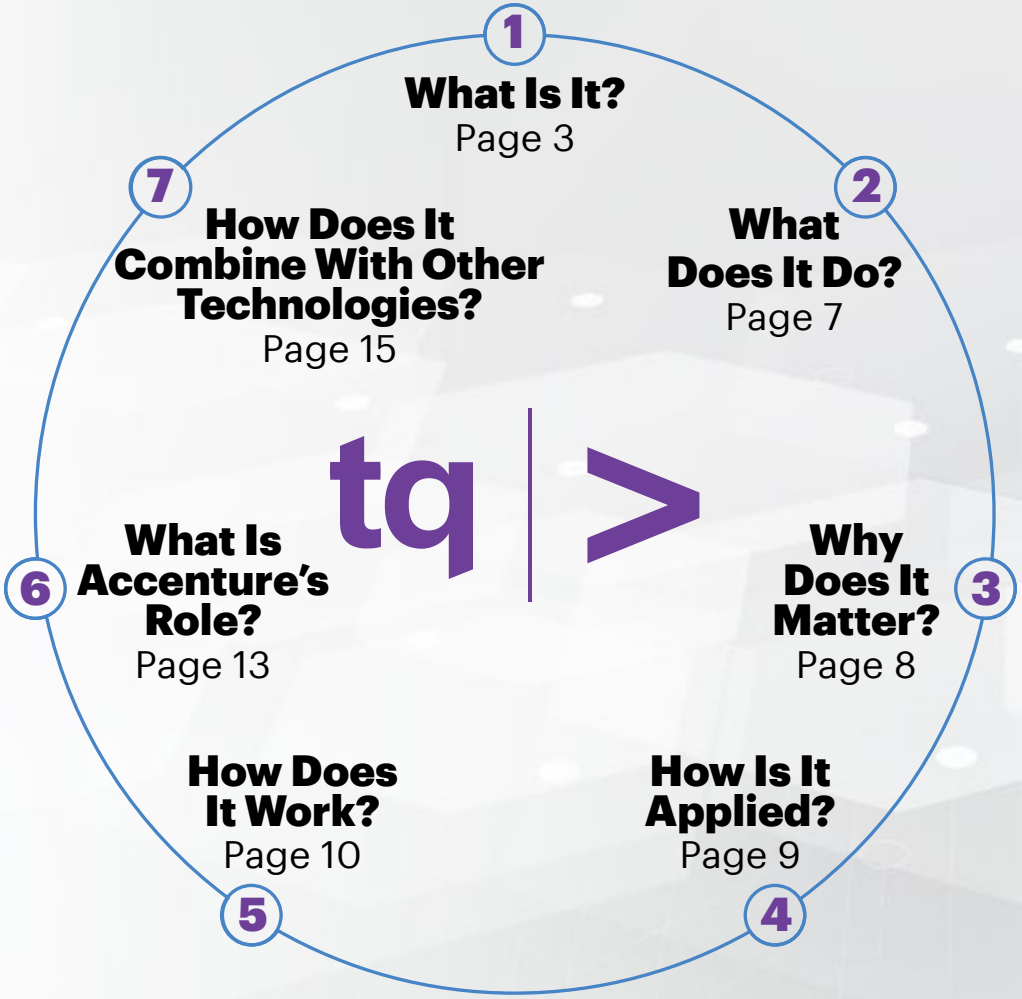

TQ Agile & DevOps
Study Guide
accenture
tq
Grow your TQ.
Grow your impact.

TABLE OF CONTENTS



1. What Is It?

AGILE

Agile (with a capital A) is a mindset and way of working. It is an iterative and adaptive approach to doing work. The common misconception about Agile is that it is "a methodology." There is no "one" or "the" Agile method, instead it's a term which has many different methodologies and frameworks that fall under it.

BUSINESS AGILITY

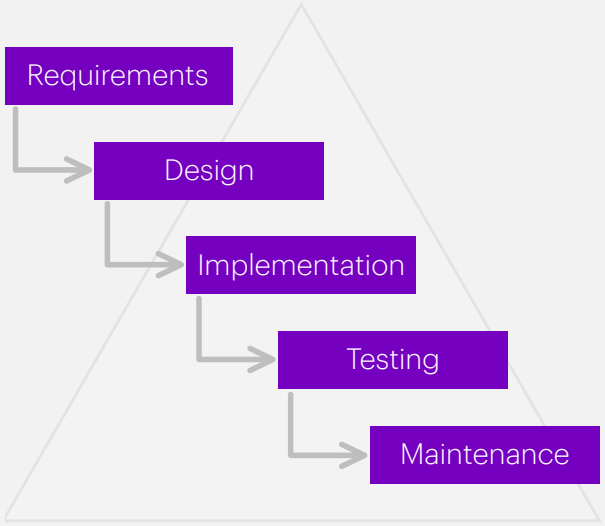
When talking about Agile, you will hear about **business agility** and **delivery agility**. Business agility includes several critical organizational competencies:

- **Delivery Agility:** The ability to deliver high-value products and features fast and responsively while continuously minimizing waiting, waste, and defects.
- **Product Innovation:** The ability to innovate products, services, as well as business models, to drive and disrupt markets.
- **Organizational Adaptability:** The ability to adapt the organization and culture including management models, policies, structures, and processes.
- **Leadership Effectiveness:** The ability to lead through complexity using styles and skills that engage and empower employees.

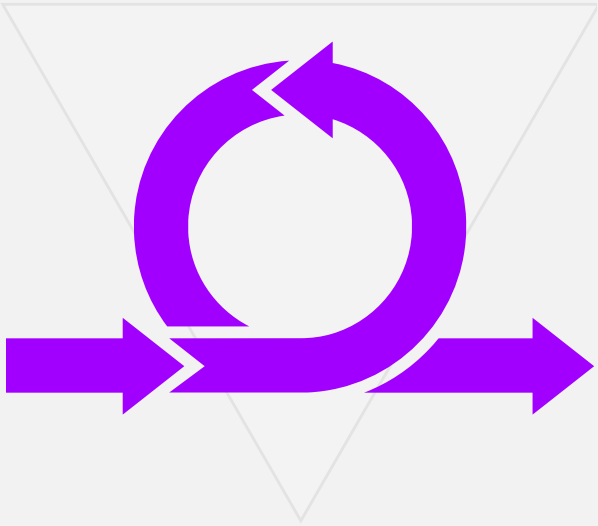
As you can see, Agile is a big topic. Let's aim to learn the foundations first, by focusing on Delivery Agility.

Agile is a response to predictive project management, sometimes known as the waterfall process. The waterfall process is a sequential, plan-driven process which assumes that you know everything at the beginning of a project. The adaptive, or Agile process, is iterative and value/vision driven.

Predictive Process (Waterfall)



Adaptive Process (Agile)



1. What Is It?

DEVOPS

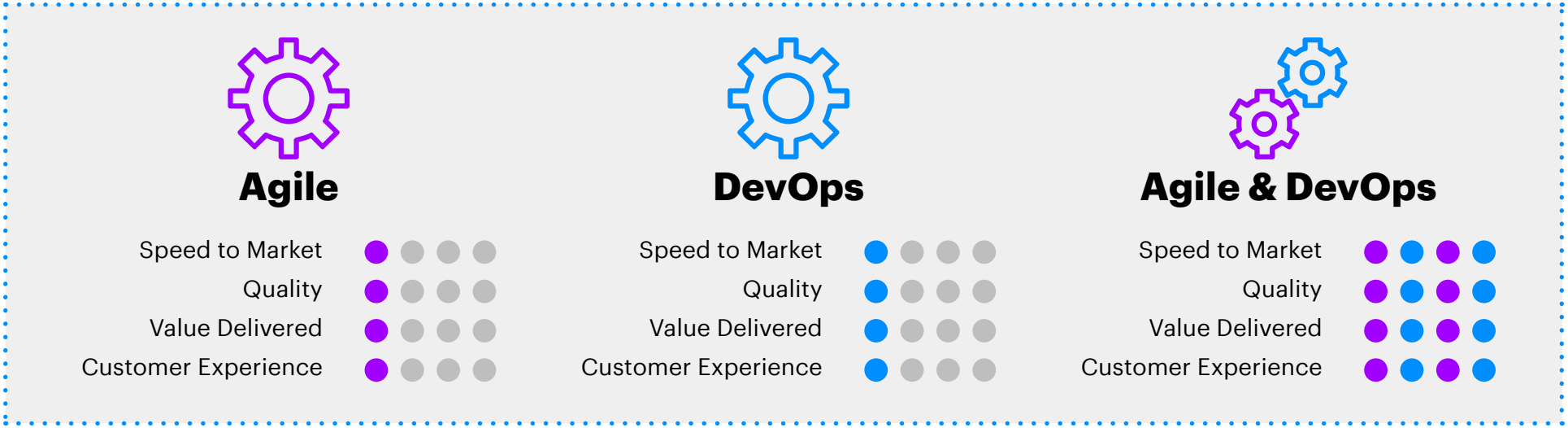
DevOps is a combination of the words “development” and “operations.” It is a new, innovative way of working where people from development teams and operations teams work together to do what is necessary to fulfill the business demand, both functionally and operationally. Businesses see DevOps as a way to improve operational support and implement faster fixes in production mode. It’s an extremely collaborative way of working that helps all parties feel like one team.

***Analogy**: DevOps can be compared to the Ford Assembly Line implemented by Henry Ford. To ensure a quality product, or output, is received, the measures of delivery must be standardized, automated, and repeatable. In the instance of the Ford Assembly Line, human interventions were replaced by machines with standardized protocols, similar to the way DevOps principles promote automation of the Software Delivery Lifecycle (SDLC) while following strong Software Configuration Management (SCM) guidelines.*

Agile and DevOps Working Together

You may be wondering why Agile and DevOps are being presented together, it’s because you can’t truly be Agile without the support of DevOps. DevOps is an organizational construct for how two or more organizations should collaborate, and Agile is a way of working.

When Agile and DevOps are integrated, the business results achieve a multiplier effect, or larger change in output.



1. What Is It?

Agile is led by a specific set of principles and values, laid out in the Agile Manifesto.

Agile Principles

- Satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development.
- Deliver working software frequently, with a preference to the shorter timescale.
- Business people and developers must work together daily.
- Build projects around motivated individuals.
- Agile processes promote sustainable development.
- Working software is the primary measure of progress.
- The most efficient and effective method of conveying information is face-to-face conversation.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity – the art of maximizing the amount of work not done – is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

Agile History

Agile Manifesto: https://agilemanifesto.org/

Agile is used by many different types of organizations. What unifies Agile for them is the manifesto and its principles and values.

AGILE MANIFESTO

We are uncovering better ways of developing software by doing it and helping others do it.

Through this work we have come to value:

Individuals and Interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Agile Myths

- Agile = Scrum
- Agile is only for building software
- Agile is project management
- Agile means we don't have a plan
- Agile is for teams, not leaders

1. What Is It?

DevOps is led by a specific set of principles and values.

DevOps Principles

- Automate everything in the pipelines.
- Provide strong source control.
- Build cohesive teams with shared objectives.
- Embrace failure, recover automatically, and degrade gracefully.
- Implement zero-touch build and deploy.
- Utilize the elastic supply of cloud resources.
- Follow lean principles and continuous delivery of value.
- Experiment without regret.
- Lead with the Engineering Excellence Practices.

DevOps History

The concept of DevOps was originally coined by Belgian consultant, project manager and Agile practitioner, Patrick Debois.

In 2007-2008, during his role on a project for the Belgian Government Ministry helping with data center migrations, Debois became frustrated over the walls of separation and lack of cohesion between application methods and infrastructure methods. This discontent, along with the inspiration of the now famous presentation by two Flickr employees in 2009, which showed the importance of the interplay between Development and Operations during a typical software deployment, fueled him to take action.

Inspired by this presentation, Debois formed his own conference called DevOpsDays in Belgium, and “DevOps” officially landed in the history books.

DevOps Myths

- DevOps is a set of automated tools and/or processes
- DevOps must include Cloud
- DevOps is only for small organizations
- DevOps eliminates traditional IT roles
- DevOps is basically Agile for the Operations world

2. What Does It Do?

Agile and DevOps help businesses deliver high quality products and services to the market quicker, while keeping the customer central to the process.

Organizations that use Agile and DevOps may experience the following business benefits:

Continuous Delivery of Customer Value | **Risk Reduction** | **Continuous Improvement** | **Happier People** | **Adaptive Lightweight Planning** | **Rapid Feedback** | **High Quality and Confidence**

AGILE & DEVOPS IN ACTION: A CASE STUDY FOR A LARGE NATIONAL GROCERY CHAIN

The client, a large national grocery chain, was in the middle of a multi-year service transformation deal with Salesforce.com. The multiple parallel releases resulted in more than 15 different environments to keep in sync, and it was a highly manual and error-prone deployment process.

Accenture implemented DevOps, which:

- Brought coding environments into sync
- Reduced defects related to missed steps
- Decreased the number of manual steps by > 80%
- Reduced deployment hours by > 90%
- Increased confidence in solutions being implemented

While DevOps drastically reduced the major coding and deployment issues and streamlined releases for the client, they still struggled with solution divergence. This is when multiple parallel projects deploy on different schedules. Solution divergence causes many problems—when one project has errors, defects or lags, it causes rework and slowdowns for the other projects running at same time.

This is where Agile helped. Accenture and the client agreed to implement "SAFe Agile." The Accenture and client teams completed Agile training, and project roles and processes were formally changed to align with Agile principles. All the project teams committed to following one shared release schedule, which helped them all stay in sync. This made it easier to see what each project was releasing and when. It also gave the teams a shared way to prioritize work -- they worked as a team to choose which tasks should be done next to achieve the desired outcomes.

KEY TAKEAWAY:
DevOps and Agile each provide significant value to businesses. But when they are combined, business value soars.

"My favorite way of working ever, is when combining Agile and DevOps."
- Tech Arch Delivery Sr. Manager

IMPACT

Outage windows decreased from 8+ hours to 30 minutes.
Moved from 15+ environments to 4 environments.

What were the outcomes of Agile and DevOps combined for this client?

- A reliable, repeatable, deployment process
- Lower risk by automating manual steps and environment sync
- Reduced costs by eliminating overhead required for parallel releases
- Fewer hours spent managing multiple environments and fixing defects, which freed up resources to work on more valuable tasks
- Ability to deliver more releases, more quickly and with more confidence
- Ability to prioritize the most impactful items for the business
- Ability to work on one release schedule with no solution divergence

3. Why Does It Matter?

With the rate of competitive disruption increasing, and the emergence of new and exciting business models, the traditional market leaders are feeling the pressure to become more Agile. Leading businesses must innovate and deliver more effectively than their smaller competitors, while being willing to disrupt their own products and business models to survive and thrive into the future.

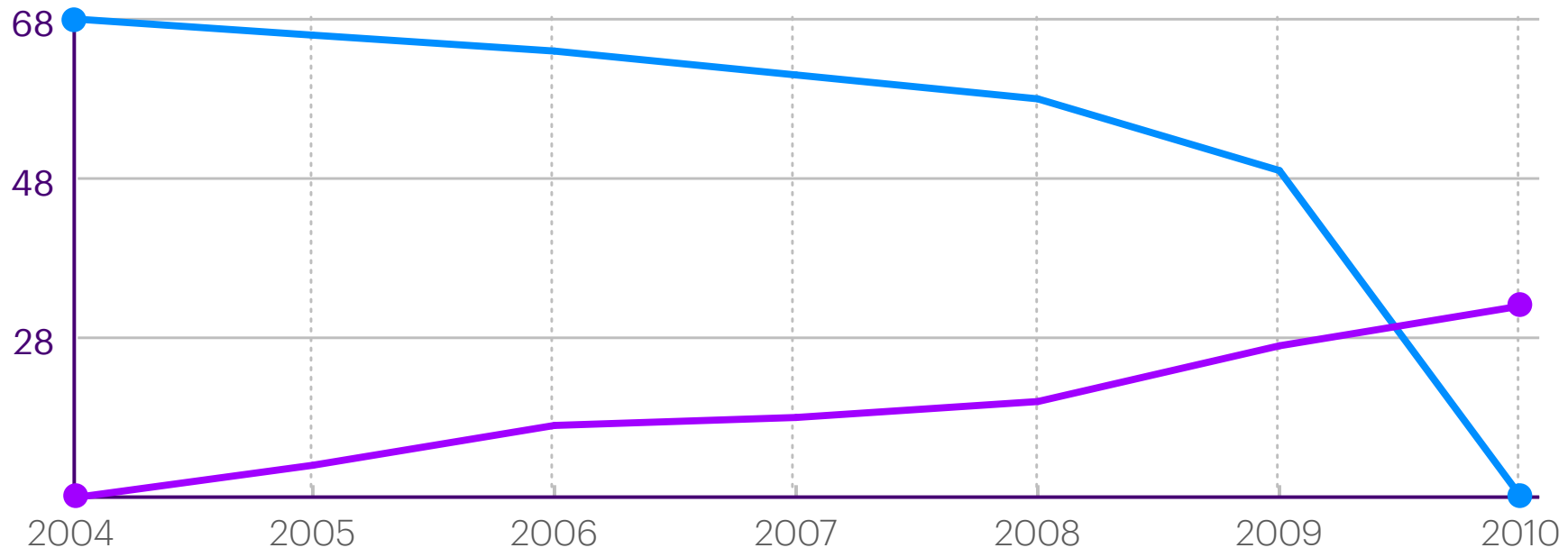
By being early adopters of Agile and DevOps, these companies became well known for disrupting their industries, and changing it forever...

*...**Uber** disrupted the Taxi/ Limo/Transportation industry without owning a single vehicle.*

*...**AirBnB** disrupted the hotel industry without owning a single room or hotel.*

*...**Netflix** disrupted the movie rental industry without owning a single rental store.*

NETFLIX vs BLOCKBUSTER



4. How Is It Applied?

THE PRINCIPLE OF FLOW

Business outcomes of Agile and DevOps include reduced cycle time from concept to the delivery of customer value. This means more products and services out to customers faster, which reduces costs for businesses and ultimately increases their profits. This is called Flow. Successful Agile and DevOps programs get the attention of the rest of the organization, and it spreads. People, stakeholders, and leaders realize that these gains in delivery agility are fantastic but can only progress so far without the rest of the organization joining. As a result, Agile and DevOps invites a broader conversation.

Agile can be built into the way a company works by ...

- Breaking work into smaller pieces
- Seeing the work with visual management
- Limiting the work in progress
- Collaborating and co-creating with end users

DevOps can be built into the way a company works by ...

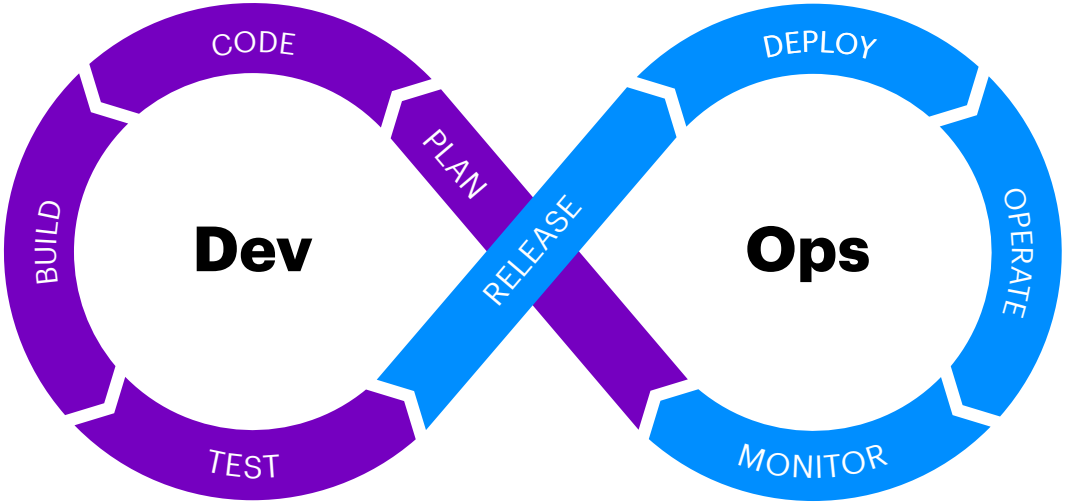
- Decreasing the time from commit to code running in production (Flow)
- Increasing the feedback from production back to development (Feedback)
- Continuously improving and evolving the processes (Continuous Learning)

5. How Does It Work?

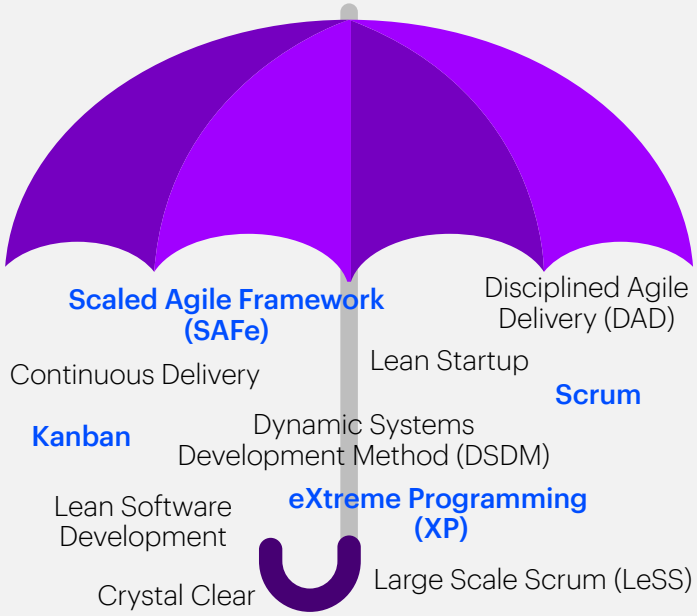
Agile and DevOps have multiple frameworks, and ways of working, that come to life through small cross-functional teams.

DEVOPS

DevOps functions as a continuous delivery pipeline using Continuous Integration, Continuous Delivery and Continuous Deployment. Depending on the technology stack, the tools will change, however the delivery flow will remain the same.



Continuous Integration, Continous Delivery, Continuous Deployment



AGILE FRAMEWORKS

There are many frameworks that enable an Agile way of working. Scrum, Kanban, eXtreme Programming (XP), and SAFe are four of the most widely used frameworks. They are designed to provide teams with an efficient way of working and focus on continuous delivery. Let's learn a little more about each of them...

***Analogy**: Like the term "martial arts" where under it are specific styles like Karate, Jujitsu, Hapkido, etc.; similarly Agile is an umbrella term under which there are many frameworks and processes that will help you be more Agile.*

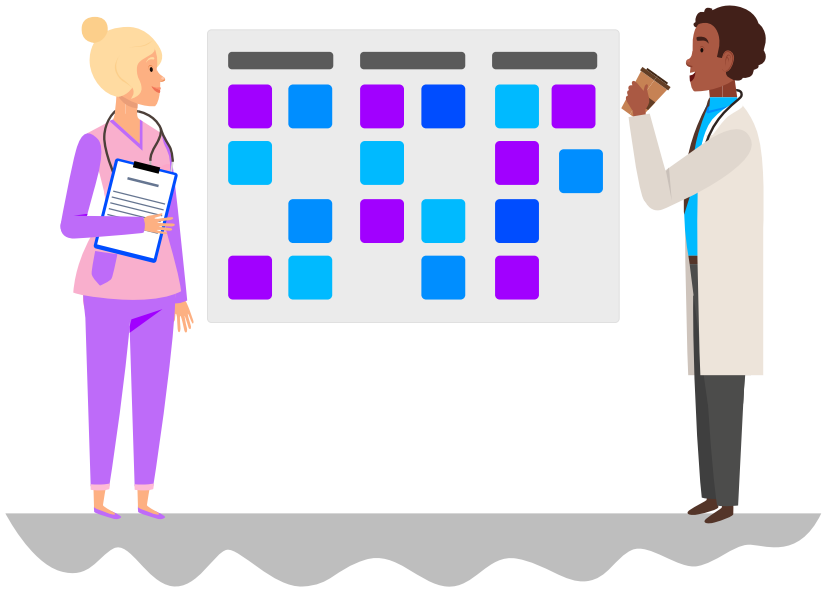
5. How Does It Work?

Scrum

Scrum is comprised of a series of short iterations – called sprints – each of which ends with the delivery of an increment of working software. Sometimes the term Scrum is incorrectly used interchangeably with the term Agile.

Kanban

Often mistaken for just being the board teams use to manage their work, the Kanban Method is in fact a set of principles and practices that help to achieve balance between customer demands and business capabilities. Techniques, like limiting work in progress, reduce bottlenecks and increase throughput by enabling focus. Kanban can be applied to help improve many teams, even Scrum ones! Unlike Scrum, many teams using Kanban don't have fixed sprints - this can make it particularly useful for those dealing with unpredictable contexts focusing on flow, like customer support, operations, or even legal!



Agile isn't just for software! ... Hospitals use this practice to help manage surgery schedules. The doctors and nurses can look at the surgery board and know what surgeries are happening, when, and by whom.

eXtreme Programming (XP)

XP is short for eXtreme Programming, a software development methodology adhering to a very iterative and incremental approach. XP is intended to improve software quality and responsiveness to changing customer requirements. As a type of Agile Software Development, it advocates frequent releases in short development cycles (timeboxing), which is intended to improve productivity and introduce checkpoints where new customer requirements can be adopted. XP consists of a number of integrated practices for developers and management – most successful Agile practitioners adopt some subset of XP practices, often in conjunction with Scrum.

Scaled Agile Framework (SAFe)

SAFe is a set of organization and workflow patterns, which combines Scrum, Kanban, XP, and DevOps into a super framework, intended to guide businesses in scaling Agile practices more broadly across their enterprise.

CHARACTERISTICS OF AN AGILE TEAM

The most effective Agile teams have these characteristics:

- Small and Cross-Functional (two-pizza teams)

***Amazon** has popularized the term "two-pizza teams" under the notion that if you can feed the team with two large pizzas, they are probably about the right size.*

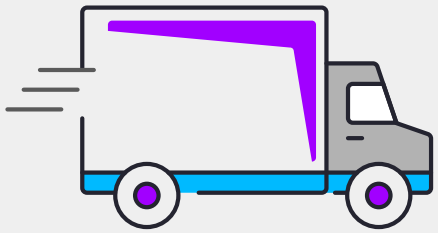
- Self-Organized
- Shared Purpose
- Drive Value to the Customer
- Collective Ownership
- Dedicated

5. How Does It Work?

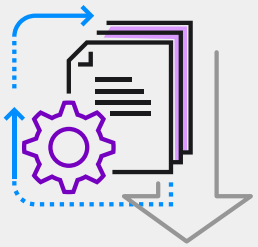
AGILE WAYS OF WORKING

Once the Agile team is assembled, it must commit to following a core set of guidelines during their project work. These Agile Ways of Working include:

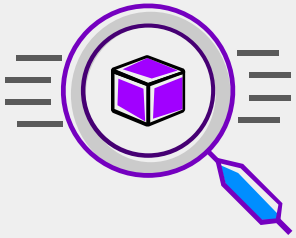
Deliver Value Early and Often



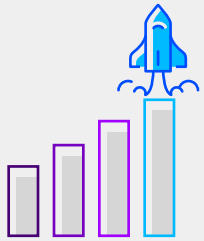
Small Batch Sizes



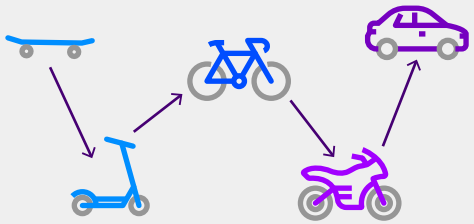
Prioritize and Focus



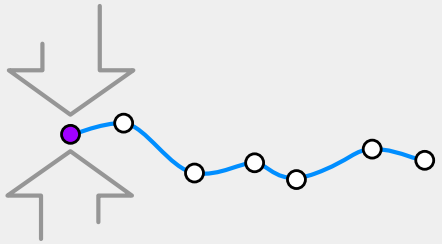
Deliver Highest Value First



Iterative and Incremental

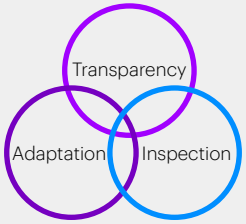


Pull Quality Forward

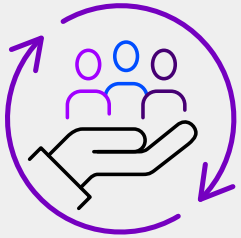


Deep Transparency

Inspect and Adapt, Continuous Improvement



Agile Leaders



6. What Is Accenture's Role?

Agile and DevOps is a way of life for Accenture people. Every single part of our business incorporates Agile and DevOps in some way. Not only do we use it to implement changes to our own business, we have strong and proven results in coaching our clients through adopting these principles. We have experience and knowledgeable global teams of Agile, DevOps, and Business Agility experts.

AGILE CLIENT ADVISORY

SolutionsIQ was established in 1979 in Redmond, Washington, and was acquired by Accenture in 2017. The combination of SolutionIQ's people, passion and experience in business agility transformation paired with Accenture's respected global platform and in-depth technology expertise uniquely positions us to guide our clients. SoutionsIQ is a premier Agile coaching organization, that provides Business Agility transformation services to clients seeking to improve their capabilities to be more adaptive throughout their business.

AGILE AND DEVOPS FOR CLIENT IMPLEMENTATIONS

Accenture works with thousands of clients implementing new solutions, whether that is installing whole systems, or helping them deploy new products and services. Our delivery and implementation practitioners are skilled in working with the client and deploying Agile and DevOps.

One way we bring innovation, common language, and a shared mindset to our clients, is through FORM. This is a collection of methods, mindsets, and practices that help our clients implement and operate in the New. Using FORM methodology, we co-create with our clients to create relevant, sustainable outcomes.

INTERNAL AGILE

Accenture brings Agile to life every day for our clients, but we also do this for ourselves, internally, throughout many of our Corporate Functions.

Learning

Our internal learning organization has adapted Agile ways of working. When developing training, Accenture Learning has embraced an iterative model where content is developed and tested incrementally. This increases development speed and reduces errors that were rarely found after deployment, discovering them earlier in the process. This increased transparency makes work visible to key stakeholders, alleviating any surprises at the end.

Agile in Action: Due to the pandemic in 2020, all Accenture classroom training around the globe had to cease. Using Agile principles, within weeks, the learning organization converted all prioritized classroom training into virtual training. To do this quickly, we had to co-develop with our stakeholders, work in sprints, prioritize, and focus on the most critical training needs.

Marketing

Agile marketing is the natural progression of Agile values as they spill over from software development into other parts of the organization. The same values, principles, and ways of working apply, only the objectives and obstacles are different. Agile marketing is about adapting, rather than planning. It's about moving from big design up-front thinking and meticulously planned work into a more iterative, collaborative, and transparent way of working.

Agile marketing isn't new: it's marketing guided by Agile values. Nifty tools help.

Agile in Action: Last year, SolutionsIQ ran a social media campaign promoting our Agile Glossary. Shortly after launching the campaign, we realized that our old logo didn't reflect the innovative work we do and the people who do it – we needed to update our brand and logo to build that connection.

Had we designed the entire campaign of 40 different social images upfront, we would have had to redesign each of those images when we changed the logo. Instead, we worked iteratively and in small batches each week with no wasted effort.

6. What Is Accenture's Role?

PARTNERS

Our Ecosystem Partners

Accenture has a partnership ecosystem that includes alliances with over 60 businesses. This allows us to provide unique insights into application and tool features, future roadmaps, licenses, and access to training programs.

Agile Partners

Our Agile and Business Agility partnerships allow us to use thought leadership from globally recognized institutions such as: Agility Health, Business Agility Institute, ICAgile, Atlassian, and Scaled Agile.

DevOps Partners

Leveraging our ecosystem of partnerships and proprietary tools and assets helps us accelerate the use of DevOps.

HOW WE ACCELERATE DEVOPS: LEVERAGING OUR ECOSYSTEM OR PARTNERSHIPS COMBINED WITH OUR PROPRIETARY TOOLS AND ASSETS

Powerful Alliance Ecosystem
of more than 150 technology providers

40+
specific alliances with market leading and emerging software and service vendors

Unique Insights
into application and tool features, future roadmap, licenses and access to training programs

Preferred Partnerships
to offer their tools at low / no cost to our clients (with some caveats)

ACCENTURE'S AGILE AND DEVOPS CAPABILITIES

Accenture's Agile and DevOps talent, experience and capabilities are world-class...

250+
Clients supported by North American DevOps Solution Factory

75,000+
Skilled Agile Professionals

Trained **25K+** in our DevOps Academy

5,000+
Trained DevOps Professionals

Agile development and DevOps capability in the majority of Accenture's **50+** Advanced Technology Centers across 40 Industries

Create and Publish **100 Podcasts** through Our Agile Amped Program Yearly

More than **35%** of Our Application Development Work is Agile

150+ Agile Coaches

650+
Projects using Accenture DevOps Platform in Managed Service

24,000+
Agile Certifications with roughly 75% in:

- Certified ScrumMaster
- SAFe Agilist
- Professional Scrum Master 1
- ICAgile Certified Professional
- SAFe Practitioner

7. How Does It Combine With Other Technologies?

It's important to remember that Agile and DevOps are mindsets for adaptive ways of working. They come into play with almost any technology.

CLOUD, AGILE AND DEVOPS

Cloud relies heavily on Agile and DevOps.

Using Agile and DevOps with cloud computing offers a highly collaborative environment. When a team finalizes a feature, they can move it to the cloud and users can provide powerful feedback instantly.

Cloud implementations can all be done faster and more successful by employing Agile and DevOps techniques.

ARTIFICIAL INTELLIGENCE (AI) AND DEVOPS

There are many ways AI is transforming DevOps. Let's look at a few:

Software testing: AI enhances the software development process and makes testing more efficient. A large amount of data is produced through testing and AI can decipher patterns and help identify coding practices that create errors.

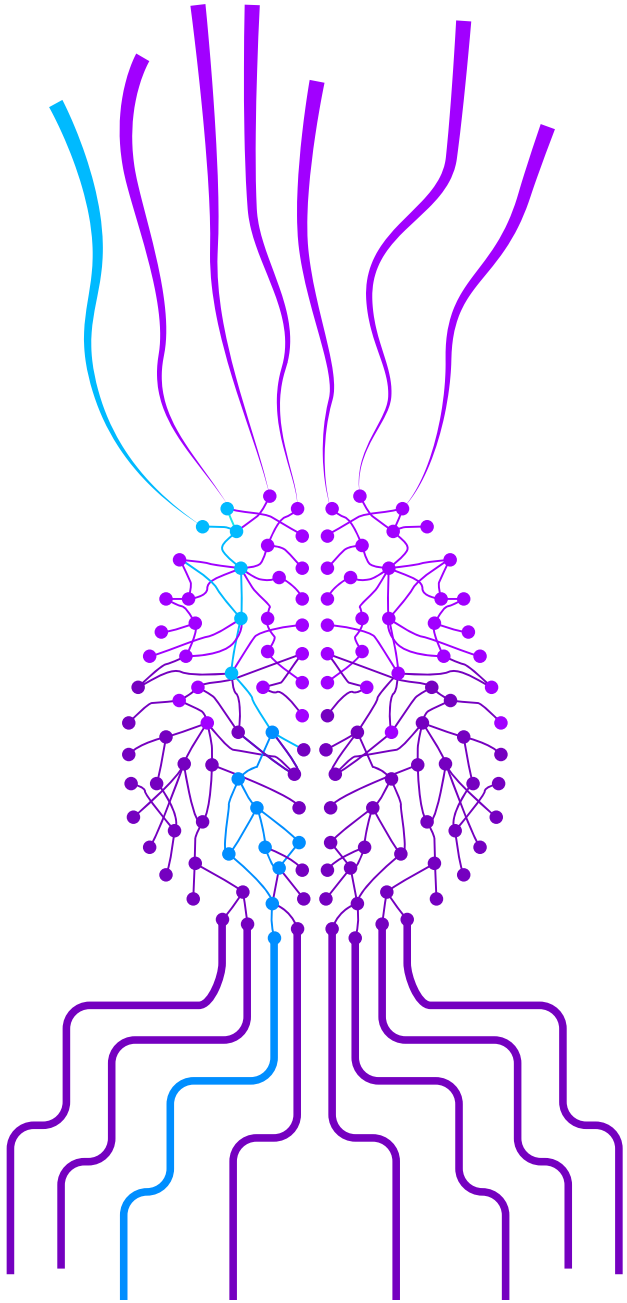
Improved data access: DevOps teams need unfettered access to data. AI can liberate data from its organizational silos for big data aggregation. It can collate data from multiple sources and organize it to be used for analysis.

Swifter failure forecasting: When a DevOps tool experiences a major failure, it weakens the process and slows down the cycles. Machine learning models help in predicting errors based on data. AI can identify problems that humans can't. Early prediction and notification helps the team to identify and fix the issues before they have an impact on the Software Development Life Cycle (SDLC).

More efficient collaboration: Because developers have to write and release code quickly, the Operations teams need to minimize disruption to the existing systems. AI-powered systems can help by providing a single, unified view into systems and their issues across the complex chain of DevOps. AI can improve the collaboration between development and operations teams.

SECURITY, AGILE AND DEVOPS

DevSecOps is a new conception of DevOps that incorporates security within Agile and DevOps practices. The constant threat of hackers requires businesses to protect their systems. AI can boost DevSecOps by recording threats and running automated threat detection protocols.



8. Continued Learning

Accenture's Agile Wiki

Agile Training & Career Management

Business Agility Lead Training

Business Agility Transformation

DevOps Transformation

DevOps Learning

Digital Factory Collection

FORM

Kanban Learning