

Team Roles in Software Development



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Software Development: the work of a Team

Most people might imagine that software is created by an individual typing away in their basement. The reality is far different.

Multiple steps exist between the original application concept and the release of the software into use.

Design.

Development.

Deployment.

Each of these steps is accomplished by a team working together and filling their individual roles.

These roles in software development rely on other roles to create a better application.

You might be tempted to point out that some applications are created by one human. True. Yet, the addition of a team will make the application stronger and better. Whether one is composing a song, writing a book, designing a space shuttle, or creating an exercise app, the interplay of ideas and skills of a team will help bring about success.

We'll take a closer look at role titles and responsibilities on the following pages.

"The strength of the team is each individual member. The strength of each member is the team."

-Phil Jackson



Salespersons: First Point of Contact

Ultimate Goal: to find potential leads and foster them into becoming clients



The time has come for a company to outsource software development. Now what?

Much like the purchase of any product, the natural step to take when one needs a product is to seek out the person who is selling the product they require. Whether they looked up their contact information online or connected with them in person, a company will connect with a salesperson to determine if the relationship will proceed. This first step of approach is called a "Lead."

The salesperson at a software development company has more to do than simply tell a customer they'll throw in a wash and wax for free. Once the salesperson is approached with a Lead, they will need to assist the potential client company in determining if the development company is capable of producing the software they need, understand the available funds for the development, and ensure that the partnership between the two companies has a high chance of a successful outcome for both.

As soon as the salesperson has determined that the needs and abilities are a good match, the Lead is changed into a "Qualified Lead."

Once the status is changed to a Qualified Lead, the salesperson will set up an initial meeting with other members of the development team.

Depending on the company, a Business Analyst and/or an Account Manager might be brought on to assist in the care of the potential client at this time.

We will look more closely at those roles later, although it is not uncommon for the Business Analyst, Account Manager, and/or Salesperson roles to be combined.

Unless the salesperson does fill these other roles, they will most likely give over the care of their customer to the people who will guide them long-term through the development process.

With the handoff completed, the salesperson will return to their primary role of seeking new potential clients.

Account Manager



Ultimate Goal: a strong working relationship between development team and client company

The Account Manager is responsible for onboarding clients and handling client relations. What exactly does that mean? Basically, the Account Manager is responsible for fostering a strong relationship between the development team and the client.

To condense this all into one word--Mediator. The account Manager will mediate issues with the product to the client. The Account Manager will mediate issues with the client to the team. Their primary role is to ensure everyone is happy and working together in a way that will enable everyone to achieve their goals.

With many relationships between software companies and their clients lasting years--and even decades--a strong relationship cannot be underestimated.

The roles of Business Analyst and Account Manager are frequently combined.

Business Analyst



Ultimate Goal: translating the business needs of the client into software requirements

When companies approach a development company, most often they have an idea of what they need or want an application to do.

Perhaps a client says, "I need an application to track profits and losses for my florist business." Although the client has a goal--tracking profits and losses--they are generally not completely certain of each individual component they will need in the software.

Do they need to track how many flowers they throw out due to wilting? Do they need a module to track payroll? Do they wish to count the revenue they receive from views on their YouTube channel as profit?

The Business Analyst will help guide the client in creating a definitive list of their needs and assist the team in the creation of a list of requirements. This role ensures that the client and team have a clear view of how to proceed further in the partnership.

Software Architect

Ultimate Goal: creating a project framework by making design decisions and establishing technical standards

After the requirements and needs of the client have been clearly defined, the Software Architect is brought on board to take and use them to create a development plan.

A Software Architect will make many of the design decisions for the project. One of his first decisions will be to determine the programming languages that will be used to code the application.

With a myriad of programming languages available, the Software Architect must not only determine which ones will be best suited to the needs of the project, but also make certain that each individual language will work seamlessly with the selected platforms, databases, and other coding languages. Essentially, a Software Architect takes the abstract and formulates the plan to make it concrete.

Think of it as a building architect. Someone in need of a house might approach an architect and ask them to design one. They wish for a residence that fits into the natural surroundings, is comfortable to live in, and is spacious. The Architect will use those guidelines to design a house, but must also take into account items not mentioned in the brief. Is the land swampy or solid? This question will determine the foundation choices. Is the cost of materials high? This might determine the size of house capable of being built within the established budget. Will the materials work together and look attractive? Perhaps the architect will select a different kind of stone to better match the selected brick.

In the same way, a Software Architect must determine the answers to many questions that might not be included in the requirements to determine the best way to plan the application. Only then can he accurately create the application architecture.



Project Manager

Ultimate Goal: managing the project, requirements, and team on a day-to-day basis



The Project Manager will usually be introduced to the client in the first meeting with the team. Their role in the team is a broad one.

They are responsible for much of the day-to-day management of the project, with some of their primary goals being to keep a project on time and on budget. They accomplish this by taking the resources allotted to a project--both money and personnel--and put them into the positions to most efficiently accomplish the client's needs.

A good Project Manager will be able to assign the order of importance to tasks needed. If, for example, the florist in one of the previous examples wants to track losses, a Project Manager might assign tasks that will track larger expenses--payroll or the purchase of flowers--over smaller ones--ribbon or florist tape. The reason he assigned the tasks this way was to enable the client to get the most value in the shortest amount of time. These decisions are usually made in partnership with the Product Owner. With the high focus on incorporating client-requested changes in Agile, a Project Manager is often the one to create the updated requirements and tasks needed to achieve the client's new goals. Perhaps, the florist wants to create an online order module before Valentine's Day. The Project Manager will move the necessary tasks up on the task board.

Another aspect of their job is the creation of a project plan and then the tracking of those goals to determine if the project is progressing on time and on budget.

A Project Manager needs to be a good communicator both with his team and with the client. His skills should also include the gift of mediation and a high degree of organization in order to ensure that no parts of the project are missed.



Product Owner

Ultimate Goal: maximizing the value of the product by formulating a project vision and making necessary decisions to achieve that vision

An important role in software development is that of the Product Owner. Some development companies will provide this role, while others will ask the client company to fill the role with their own personnel. No matter which company the Product Owner comes from, they are an integral part of the software's creation. They will work closely with the Project Manager throughout the process.

Their primary goal is to maximize the value of the product. How do they do this? By making decisions, clarifying goals, and defining, keeping, and sharing the product vision with those on the development team.

They will manage the Product Backlog, and assist the team in determining the next tasks to be accomplished to return the most value to their company.

A Product Backlog is a prioritized list of the tasks necessary to complete an application.

In the aforementioned florist example, it would be the product Owner who would decide to move the sales capabilities to the front of the task list in order to complete them by Valentine's Day.

Although many in the client company might be unaware of the ins and outs of the development being completed, the Product Owner will usually attend daily, weekly, or biweekly Scrum meetings to clarify goals, establish plans for the upcoming sprint, and add new tasks to the Product Backlog if required. Product Owner is a position of authority within the development process. They will determine everything about the process including features, priorities, the addition or subtraction of tasks, and even when to reject additional proposed changes to the product.

Back-End Developer



Ultimate Goal: creating the inner workings of an application and data storage solutions

With all requirements now established, an architecture completed, and tasks assigned, the actual coding of the application can begin.

Back End developers are responsible for building the server-side of the application or the code that runs behind the scenes. They create data storage solutions and improve the speed and efficiency of the application. This is all done while working in conjunction with front-end developers to ensure that the entire application works cohesively.

Although their work is never seen by those using the application, they lay the foundation for the program's functionality. Back End developers are critical in the development of software, the inclusion of a security framework, and the creation of workable applications.

A Developer skilled in both front and back end programming is called a Full-Stack Developer

Front-End Developer



Ultimate Goal: using the foundation created by Back-End Developers to create a useable application

Front-End Developers mediate the world between technology and design. A front-end developer takes the foundation created by back-end developers and builds a useable application. The back-end developers create the server-side of the application, and the front-end developers create the client-side of the program.

Their main goal is to take the functionality and make certain that a user can interact easily with the application. They do this by coding a website's appearance using both design and technology.

Another primary responsibility of their job is to ensure a smooth experience for the user by finding and eliminating bugs.

Additionally, they will determine that the application is accessible to users across browsers.

Both front and back end developers are necessary to create functional and accessible applications.

User Interface and User Experience Developers/Designers



Ultimate Goal: using design to guarantee an excellent user experience

User Experience and User Interface Developers are similar--but different-- and often filled by the same team member. Much like the Front-End Developer, the UI/UX Designer is responsible for creating a good experience for the user. However, Front-End Designers create a user experience through *Development* and UI/UX Designers create this experience through *Design*.

What about the difference between UI and UX Designers?

A User Experience Developer is responsible for the interaction between the human and the computer. Their goal is to enable the user to complete tasks or experience the application in a logical, easy, and intuitive way.

Unlike UI design, UX Design is not about the visual components of a site, but rather the way the user connects with the application.

The User Interface Designer is responsible for the visual design of the application seen on a screen and the interaction with the application through touch, mouse, or keyboard.

With sight being the dominant sense used by humans, the design of the user interface is an important step in software development. Everything from selected graphics, fonts, layouts, sizes, or even colors can make an impression on the viewer and skew their interaction with the application to either good or bad.

UX wants to provide a useful and functional application for users. UI wants to provide an interactive and attractive experience for users. Both UI/UX designers will employ everything from empathy to market research to accomplish their goals.

Although there are distinct differences in the roles, the primary goal of both is to make certain that the user is happy and likely to return and use the application again.

Quality Assurance Engineers

Ultimate Goal: to test and retest applications to ensure stability and that the application works as designed.



Quality Assurance personnel are responsible for checking and rechecking that software components work both individually and jointly. Depending on whether a software development company employs Waterfall Methodology or Agile Principles and Values, a QA Engineer will have different timeframes of work.

In Waterfall Methodology, Quality Assurance will only begin work after development is complete. In Agile, Quality Assurance is incorporated throughout the process with each component sent for testing upon completion.

No matter when it takes place, QA is an important part of the development of any application. Their main responsibility is to verify that all software works as designed and is stable.

A QA Engineer will often automate processes that will test the code. This allows them to perform more testing in a shorter period of time.

Imagine it like the decoration of a living room. As pieces are picked out and delivered, they are inspected for errors and defects before being introduced into the room. With little furniture in the room, all seems well.

However, as more pieces are introduced, the room arrangement must be rechecked to make certain that all the pieces are working together. Perhaps a newly introduced green lamp clashes with a previously placed bookshelf. The decorator must re-evaluate and maybe paint the bookshelf to bring the room back into harmony. This process will go on until the room is finished and all the pieces work together in one cohesive design.

Although in the example it is the decorator constantly checking the room, in software development, the QA Engineer can automate this task. As each new software component is added, the automation will check it both individually and to make certain the code involved has not created errors in previously approved code.

The role of QA Engineers cannot be underestimated in the creation of high-quality software

The Client

Ultimate Goal: partnering with the software development company to create the desired application

The most important role of all in software development is that of the client. Although they might not be coding the software, it is their vision and stated goals that will drive the development forward.

Think of it like pirates hunting for treasure. Without the person holding the treasure map, the sailors can travel the world and come no closer to finding the gold. In Software Development, the client is the one holding the treasure map. He might not be coding the application, but his contribution is fundamental to success.

From the moment the client first contacts the Salesperson, he or she will be called upon to make decisions, define requirements, and answer questions about the product being created. What are the must-haves? What are the would-likes?

As the development moves from preliminary designs to a fully functional application, the client will provide regular feedback. This might be done through the medium of the Product Owner--whether the client company is a board, individual, or small team. Or the client might serve as the Product Owner themselves.

As the team completes deliverables and presents them to the client, he or she will examine and determine if the product is meeting requirements.

From envisioning what the application should be to confirming that the completed application works as designed, the client is foundational to the process.



Development Steps

Now that we have looked over some of the main roles involved, we will examine the basic steps of software development and which team members might be involved.

Note: Multiple roles might be filled by one person.

STEP

Team Member(s)

1. Lead

- Salesperson
- Client

2. Qualified Lead

- Salesperson
- Client

3. Preliminary Meeting

- Salesperson
- Client
- Business Analyst
- Account Manager
- Developers
- Project Manager

4. Assessments

- Client
- Product Owner
- Business Analyst
- Account Manager
- Developers
- Project Manager

5. Proposal

- Client
- Product Owner
- Account Manager

6. Agreed Terms

- Client
- Product Owner
- Account Manager

7. Design

- Software Architect
- Product Owner
- Account Manager
- Developers
- Project Manager

8. Development

- Developers
- Product Owner
- Project Manager

9. Testing

- Quality Assurance Engineers
- Product Owner
- Project Manager

10. Deployment

- Quality Assurance Engineers
- Product Owner
- Project Manager
- Client
- Developers

Conclusion



Find a software development team who cares as much about the success of your project as you do!

Although we have examined some of the primary roles in software development, this is not a comprehensive list. Many software companies will combine, separate, add, or subtract roles to fit within the needs of their companies.

A software development company might use other titles to refer to the same role or change the parameters of a job description.

Some companies will provide some of the team for free, while others will charge for each role.

Some questions one should ask when outsourcing software development are--

- What team members am I paying for?
- Is QA included in the price?
- How much is the discovery process?
- Who in my company would be the Product Owner?
- Do I need a full team or simply a few developers to integrate into my existing team?
- If QA and management roles aren't included in the price, how much extra will I be paying?
- Do our teams mesh well together?

Although these are only a few of the questions that will need to be answered, finding the right software development partner can make the difference between the success or failure of your project.

The right team will develop the right product!

Why Swan Software Solutions

Swan Software Solutions was founded in 2005 and prides itself on delivering reliable, scalable, and affordable solutions that exceed our clients' expectations.

With over 130 developers, we have many skilled team members. From QA Engineers to Project Managers, we can provide the skill set you need for your project. Our team also specializes in a variety of programming languages, and we provide a free discovery process. Clients only pay for the developer's time, but we also provide the Project Manager, QA Engineer, Business Analyst, and other roles necessary to keep your project running smoothly.

Swan believes in the Agile Principles and Values, which enables us to pivot to meet a client's needs. We believe in communication and encourage the input of our clients with real-time communication. We hold daily, weekly, or bi-weekly team meetings based on the project and client's needs.

We provide both Fixed Bid contracts and Full-Time-Equivalent (FTE) Developers in order to best meet the needs of our clients. Some of our FTE Developers have outsourced to the same company for over twelve years, but other companies have found that a Fixed Bid project --such as a new design for their website-- has been the best choice for them. No matter what sort of development help your company might need, Swan is committed to helping you succeed.

Because when you succeed, we succeed.

To find out more or set up a free assessment, contact us at swansoftwaresolutions.com



Swan Software Solutions

Reliable. Scalable. Affordable.

Free Discovery Process