

# Rapid Application Development



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# What is Rapid Application Development?

Rapid Application Development (RAD) is an agile software development approach that emphasizes quick prototyping, focuses on ongoing projects and immediate feedback rather than following a strict plan of long-term software development and testing. Developers can rapidly create multiple iterations of a software product and update it without the need to create and set a new plan for development.

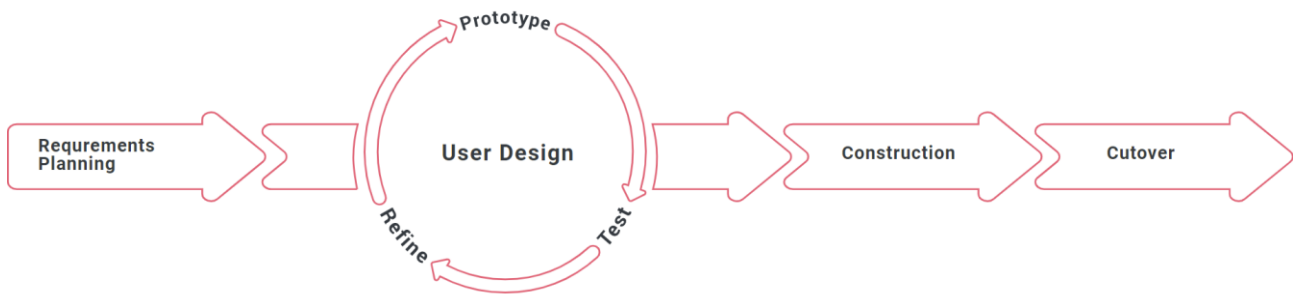
## **RAD as a general alternative to the waterfall model**

Rapid application development was a response to plan-driven waterfall processes, developed in the 1970s and 1980s. These methods were built on an old engineering model that was used to design and construct things such as bridges and buildings. Software is an entirely different artifact and needs to be treated more like clay, rather than like rocks or steel. Software can dramatically change the way a problem is solved as you can gain enormous knowledge and valuable feedback during the development process.

Plan-driven approaches are designed to define the requirements and plan for implementation beforehand. They discourage changes and encourage them to be rigid. RAD approaches, on the other hand, recognize that software development is a knowledge intensive process and provide flexible processes that help take advantage of the knowledge gained during the project to modify, reshape, improve, or adapt the solution.

The RAD approach also evolved during the period of peak interest in business re-engineering. Its idea was to change and rethink the business processes having in mind the new emerging technology. The rapid prototyping approach became key tool to help businesses to "think out of the box" about innovative ways that technology might radically reinvent a certain business process.

# Rapid application development phases



Below you can find out more about each separate phase:



## **1. Define requirements**

RAD does not require you to spend months creating specifications with users. Just, determining the expectations, general set of requirements, timelines and budget because one of the key principles of rapid application development is the ability to modify specifications and requirements at any stage in the cycle. This means gathering the "core map" and the vision of the solution about to be developed.

## **2. Design and build prototype**

Once the project is mapped out, you are ready to begin development. The goal in this rapid application development phase is developers to build something the client or end-users can see. This prototype can satisfy all or a part of the requirements (as functional unit from the solution).

### **3. Get user feedback**

With a recent prototype prepared and the completed prototype presented, the end-users provide feedback on what's good, what's not, what works, and what doesn't, which developers use to modify and adjust in order to create the best solution possible. Therefore, prototypes and beta-systems are transformed into working models.

End-users might change their minds and discover that what seemed good on paper may not be true in practice. If that's the case, developers can return to step 2 to continue developing the prototype. If feedback is positive and the client is happy with the prototype, the process moves on to step 4.

### **4. Finalize the software solution**

This is the last step prior to the solution's launch. This phase covers finalizing the features, aesthetics, functions, optimization or even small re-engineering to improve usability, stability and maintainability.

# Advantages of Rapid Application Development

## **Speed**

RAD speeds up your development process. It allows you to break down the entire project into smaller functional units. Each unit will be considered a separate prototype and tested by the developers. They will then assemble all units together to deliver the software product. This is how the delivery of the solution is sped up and bugs reduced. This will allow you to develop faster. Rapid prototyping or development is a common approach used by most companies to achieve faster development and deployment of applications and software solutions.

## **Easy and simple modification**

If your developers are using RAD then they will split your solution into smaller functional units. If certain change needs to be done, RAD enables developers to modify only the individual functional unit, rather than the entire software product. This will help you meet customer requirements much faster, thus improve the quality your solutions.



## **Rapid User Feedback**

The stakeholders involved in in the development process will most likely check out the final software product. However, most business leaders don't have any knowledge of technology. They have extensive experience in different types and sizes of departments.

So, it is crucial to solicit feedback from users during development. RAD methodology allows you to continually take feedback from users. Iterative processes are used, and this allows developers to get continuous feedback from their users. You can then use that feedback to improve your final solution. Developers are able to create additional features and functionalities and therefore ensure the solution meets the end-users' expectations. It will also assist you in speeding up your development process.

## **Superior system integration**

For integrating your software with other systems, you will need to wait until the end of your development cycle. Yes, this happens when you are using the waterfall method. Using RAD, you can find bugs and errors in your integration early on and fix them before you release the final product.

## **Benefits of RAD in short:**

- Requirements can be changed at any time
- Encourages and prioritizes customer feedback
- Reviews are quick
- Development time is drastically reduced
- More productivity with fewer people
- Time between prototypes and iterations is short
- Integration isn't a problem, since it integrates from project inception

# Does Rapid Application Development Suit My Team?

With the benefits in sight, let's determine which types of projects would benefit the most from rapid app development.

Rapid app development techniques can be used to deliver better experiences for your customers, whether you are building an internal tool or a customer-facing portal like an app or website.

If your team is required to build mission-critical software (for instance implant firmware, etc.), then you should not use the RAD methodology. The RAD approach is not only inexcusable, but also irresponsible. You cannot give feedback on your prototype if a survivor of a heart attack with a malfunctioning pacemaker.

Before you decide on a rapid development environment for your project, consider the following questions.

## **Is my software solution aimed for mission-critical systems?**

End-users who place their security and their lives under the control of your solution can leave your team with little room for making and correcting errors.

Certainly, there are exceptions for solutions that we can simulate without putting anyone in danger. Rapid app development is not the right choice if you need your project to be 100% flawless before it's released to the end-user.

However, exceptions exist for solutions that work without placing harm to anyone. But if your project must be 100% flawless before you expose it to the end-user, rapid app development is not the choice for you.

## **Will I Have the commitment and engagement from the end-users /clients and receive feedback?**

Rapid app development requires engagement and full commitment from the end-users. Everyone in the team should be proactive when asked to provide feedback and take part in the user-testing. Just like them, client must be available to provide feedback during the development process to iterate as much as possible.

## **Is It Possible To Divide The Output?**

Your team must deliver prototypes quickly and often to the end-users, in a rapid development environment. Sometimes, these prototypes are incomplete or lacking user flows. You must break up your solution, so that you can present and build the solution in parts (or functional units) rather than in one complete whole. A possible barrier to this kind of "unit development" is often found at the backend, where your solution must connect with multiple third-party systems, before you can deliver a business use-case for the end-user.

You can get around this requirement by relying on data sample, a process which generates randomized dummy data to resemble the real-life data set your end-users expect. This allows you to create prototypes that mimic the behavior of your end-users without having to make connectors.

## **Can We Iterate Fast?**

The last and most important question you should ask is whether your team can work at a rapid pace. It takes time and energy to build out your application and correct any mistakes made along the journey. Beyond development, you will need a product and design team that is able to quickly context-switch between ideation (processing feedback from clients and end-users) and assimilation.

This practice is not imbued in all teams, but all teams can learn it and Platforms for digital transformation (like Transformify) can help. RAD development is not a good choice if your team can't iterate quickly, or you don't have the resources to enable them to do this.

# When Can I Use Rapid Application Development?

## **If you have the budget**

Rapid application development can be more affordable than other types of development, but it is not always cheap. You will need to pay the right salaries for talented employees when you hire them. You can move your idea from concept to final product much faster if you have the right staff.

## **If you can test the prototypes reliably**

Rapid application development is a great option if you have users who can provide consistent and reliable feedback about the prototypes you create. The RAD model relies on feedback from previous iterations. Therefore, reliable feedback can prove to be extremely valuable.

## **If you need quick project delivery**

Rapid application development is the best option if you have a deadline. A RAD platform is the best option if you are under pressure to deliver a product that works and if you don't have time for lengthy requirements planning or design phases. RAD is a quick and flexible approach that allows for rapid development, with the ability to change direction and can be done in a snap.

# Why is RAD trending now?

In this era of digitization, enterprises are shifting towards approaches that allow applications to be developed and deployed at a fast pace.

Let's go through the main characteristic features of RAD as one of the most important tools.

## **Users participate early in the Design Phase of RAD**

After the requirements phase is completed, RAD allows users to participate in the design phase. This allows users to interact directly with analysts to create prototypes after they have fully understood the user's expectations.

## **Companies of any size can use RAD**

Rapid Application Development works for all organizations. Take, for example, a startup who is interested in web app development. RAD allows developers the ability to rapidly develop prototypes. Startups with a short development window can rely upon RAD because they can bring their solution to market earlier to generate revenue.

## **RAD gets enough user feedback**

RAD allows the development team to gather sufficient feedback from users regarding desired outcomes and feedback. These feedbacks can then be used to establish any major changes that may need to be made to the requirements.

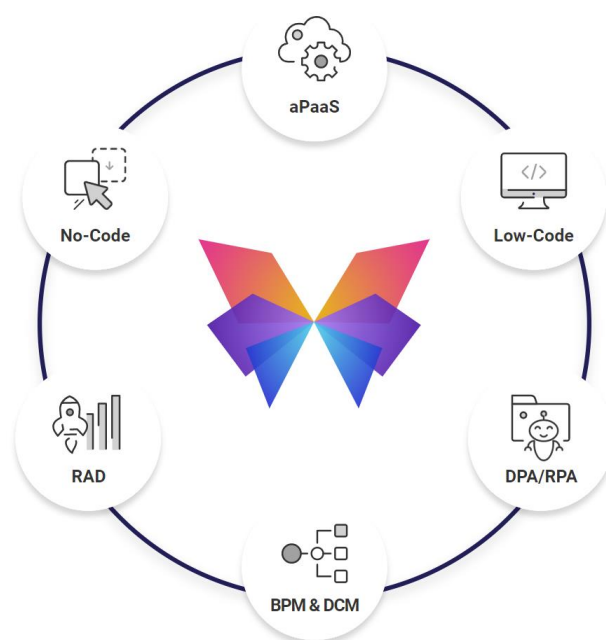
Developers can quickly develop solutions using several rapid application development tools without needing to invest in development capital.



# How Transformify powers Rapid Application Development

As you may now understand, Rapid Application Development is more of a software development methodology rather than a specific language, tool, or interface.

However, Platforms for digital transformation can help facilitate rapid design and prototyping, development, user testing, and feedback solicitation.



***SKYROCKET YOUR  
INNOVATION  
AND  
SOFTWARE  
DEVELOPMENT***

With RAD approach in our Transformify platform your business can:

- Seek funding and pitch your software concept to investors.
- Validate your ideas and clarify project requirements early in the development process.
- Prototype your software solution with lot of easy adjustments or meaningful iterations.
- Achieve fast time-to-market with reduced development budget.
- Test out and fine-tune the complete user experience in accordance with user preferences and feedback.
- Deliver software solution with enterprise-grade quality and minimal effort.

**Request an invite for Transformify private preview (limited availability) to try out our amazing all-in-one platform.**

