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Legacy Modernization: Techniques

How to deal with an old codebase

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Techniques

We are going to see the different techniques to deal with legacy code

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How can you solve the riddle of legacy code?

How can you keep the value, but reduce the cost?

There are different strategies.

Techniques

We want to approach the problem by putting together business, technical, and organizational considerations; all of which are crucial to an effective solution.

This makes the matter quite complex, it will take the rest of the course to drill down through the subject.

Techniques

We are going to start by providing a list of the techniques, which is the focus of this lesson.

Techniques

One-time migration from a language to another

Ongoing transpilation

Interpreter or compiler to execute old code on new platform

Database migration

Change of paradigm

Change of framework

Manual rewrite

Techniques

These techniques represent solutions that balance the different needs your company might have.

Techniques

Later in the course, we are going to see the techniques in detail.

Right now we present a brief overview to explain what they are.

One-time Migration

A one-time migration from one language to another consists in transforming all the code you have in one language into another.

It is the right solution when you want to get rid of the old language and platform.

" One-time Migration

With this solution, you end up using only the new language and removing the old one from your codebase.

There is another technique in which you keep using both languages.

Ongoing Transpilation

A transpiler allows you to keep writing code in one language but translate it at the time of execution.

Ongoing transpilation is necessary when you want to keep writing code in one language but execute it in another one.

Ongoing Transpilation

This is different from one-time migration because you are using both languages, at different times.

Ongoing Transpilation

For example, you want to keep writing code in VBA but want to execute it on the web, so you need to transpile it to JavaScript.

Interpreter or Compiler

An interpreter or compiler makes it possible to execute the old code (almost) unchanged in a new environment.

An interpreter or compiler makes sense when you want to keep the old code exactly as it is, but running on a new platform.

Interpreter or Compiler

For example, you want to stop using RPG on the mainframe and keep old RPG code, but run it on a standard server. You can then deploy it on the cloud.

Database Migration

Changing database consists in moving your data to a different database.

A database migration works when you cannot satisfy operations (e.g., lower costs) or technical needs (e.g., analytical power) on your current database.

Database Migration

For example, you want to move from an Oracle database to Snowflake.

Change of Paradigm

Change of paradigm means changing the kind of application you write, e.g., from desktop to mobile. The whole architecture might change.

A change of paradigm is the best solution when you need to adapt to a new environment.

Change of Paradigm

In the past, it might have been transforming console apps into desktop apps. Nowadays, it consists mostly of changing desktop apps to the web or mobile apps.

Change of Framework

A change of framework involves a substantial, incompatible upgrade from one founding framework to another.

A change of framework is the right solution when the overall software works fine, but you need to perform an upgrade that requires substantial changes.

Change of Framework

The term framework is quite inclusive.

So this technique refers to a large framework, like upgrading an application from .NET Framework to .NET 6, or web frameworks, like from AngularJS to Angular.

Manual Rewrite

A manual rewrite is the right answer to a radical mismatch between your code and current business or technical needs.

Automatic migration might be difficult, the codebase is small or not that valuable to begin with.

Any other approach would have uncertain results and costs.

Manual Rewrite

For example, your business has shifted from selling a plugin for doing data analysis on Excel sheets to selling a web service for data analysis.

You would like your users to keep using the same formulas they are accustomed to, but the overall architecture is so different that you need to start from scratch.
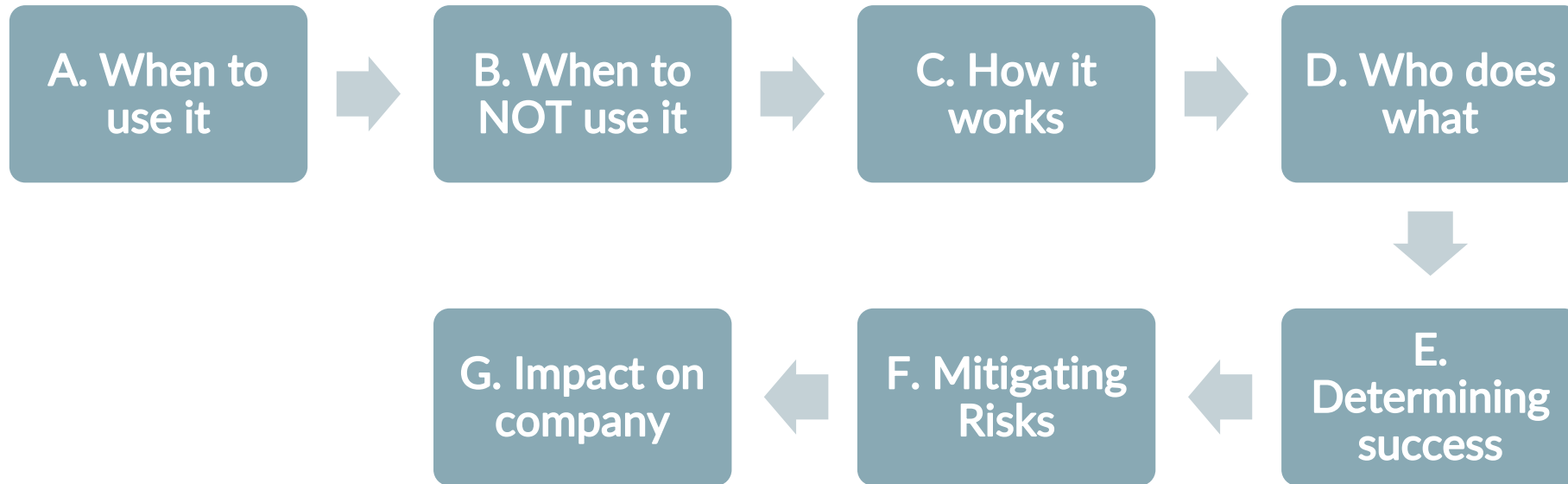
" Roadmap

Each technique will have its own lesson that will follow this base roadmap.

Roadmap

Roadmap for a technique lesson

Summary

We have seen all the available solutions for legacy modernization.

Next, we are going to show how to pick among these the right one for you.