Discovery Phase:

Verifies Ideas against Business Needs, Identifies Project Risks, Narrows down Project Scope, Outlines Implementation Roadmap

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CONTENTS

Understanding the Discovery Phase

Before you commit to a solution development – whether from scratch or as an existing app enhancement, to avoid unexpected results due to information gaps, we advise that you weigh in on all the vital aspects of the upcoming project.

Some of these major aspects include: goals you'd like to achieve with this development, optimal steps to achieve the set goals, things that may interfere with the process, etc. Without having your strong opinion on such aspects, we'll be able to provide only a ballpark range of the project cost and duration.

Once we get down to requirements gathering, the ballpark estimation is likely to change. This happens because each functional feature is decomposed into its core constituents, thus uncovering hidden efforts. To make sure you arrive at the requirements gathering phase with a better idea of the project limitations, potential risks, implementation feasibility, major feature set, relevant technology, and development roadmap, we suggest starting with the Discovery phase.

DISCOVERY PHASE

It's a limited period (1 - 4 weeks) that precedes the requirements gathering phase (aka Business Analysis or BA phase).

At Softeq, we dedicate this time to digging out all the contextual details related to bringing a new tech solution to the market. Business goals, stakeholders, competitors, risks – are on the Discovery phase to-do list. If identified late in the BA phase, they may negatively affect the project in terms of the scope, cost of the BA phase and of the development, as well as solution marketability.

Key participants on Softeq's side: Business Analyst, Solution Architect/ Technical Lead, Project Manager

Key participants on Customer's side: key decision-maker(s)

Things under Discovery

Below we explain what exactly we aim to discover. We also provide examples of how you could shape your ideas on each aspect to help thorough Discovery. Going through some or all of the aspects below together with a BA will help fill in information gaps. The input elicited during this Q&A session will serve as a backbone for making a rough effort estimation.

Key aspects we explore: **Business Vision, Business Goals, Opportunities, Domain, Market, Competitors, Stakeholders, User Needs, Risks, Solution Options, Minimal Viable Product (MVP), Roadmap, Features, Scope Boundaries, Limitations.**

Business Vision

An outline of what you aim to create, how you're going to use it, how many parts the solution will have, who'll be using the solution and why, etc.

> **i**   *Only 52 percent of companies surveyed by Deloitte have a technology investment decision-making process jointly owned by IT and the business.*

Too vague to estimate efforts	Clear enough to proceed to estimation
Build a solution for trucking services	Build iOS Uber-like application for private and commercial cargo service providers

Business Goals

Things you aim to achieve by having your solution implemented

Too vague to process	Clear enough to proceed to estimation
Release the solution to the market	I'd like to earn $XXX,XXX in a year's time after the solution has hit the App Store I'd like the solution help me save money by automating the process of setting appointments with my clients

Opportunities

Things you could achieve by implementing your solution

Too vague to estimate efforts	Clear enough to proceed to estimation
Release the solution to the market	Prove the viability of our in-house created technology and adjust it to meet the needs of the target audience

Domain

Any existing industry conventions, standards, or best practices your solution have to comply with

Too vague to estimate efforts	Clear enough to proceed to estimation
I'd like to implement an app for medical professionals	The app will process patient's data, which means Protected Health Information (PHI). That's why the app should envision secure processing, storage, and transmission of PHI as required by HIPAA and HITECH Act

Market

Current market trends, customer preferences, competitor presence, etc.

Too vague to estimate efforts	Clear enough to proceed to estimation
Start in North America, then in Europe	The commercial trucking share in the US market is expected to increase by 25% by 2030. There's no solution to satisfy user needs in an easy-to-use private trucking management

Competitors

Key similar solutions. This information will help understand what could be done better to gain a competitive edge

Too vague to estimate efforts	Clear enough to proceed to estimation
There are no similar solutions on the market	There's player X and player Y on the US market. In my view, their solutions don't meet the user needs: critical process steps are not automated, using them is not easy, I don't feel the information is stored securely
I do not like the competitors' apps, that's why I want to develop my own application	My parking services app should resemble the functionality of the Uber app. This will help my clients see how many valet parking facilities are nearby to request a car parking service

Stakeholders

All the parties related to the solution release and their needs and expectations of the solution

Too vague to estimate efforts	Clear enough to proceed to estimation
Stakeholders are people from multiple departments	The parties involved are: commercial trucking expert proficient in trucking processes and best practices; CTO responsible for technical decisions; CEO responsible for budget and timelines; head of marketing responsible for product launch; several potential end-users to elicit feedback at early stages

User Needs

Solution's functional capabilities and UX vs. end-user needs

Too vague to estimate efforts	Clear enough to proceed to estimation
The key app's capabilities should be the ability to find a nearby medical professional and request a visit	Patients are able to generate medical assistance requests or cancel them, rate health care providers, and view history. The nurse practitioners can confirm or decline requests depending on their workload

Risks

Potential roadblocks: funding, stakeholder needs, market situation, regulatory compliance, etc.

Too vague to estimate efforts	Clear enough to proceed to estimation
We'd like the app to be demoed at an industry event, which will be held in a month's time.	We'd like the app to be demoed at an industry event, which will be held in a month's time. We'd like the app to be able to stream content in real time during the demonstration. To make sure we're not compromising the deadline and app's quality, we'd prefer cutting down on some less essential features, which will not affect the overall app's performance.

Solution Options

The most viable strategy out of available for achieving your goals.

Too vague to estimate efforts	Clear enough to proceed to estimation
Implement a custom solution from scratch	Develop an end user mobile app from scratch. Buy and integrate a ready-made CRM system and an online chat

Minimum Viable Product (MVP)

The minimum necessary set of features for the first solution iteration

Too vague to estimate efforts	Clear enough to proceed to estimation
Develop all features on time and on budget	First, we need to release the solution with a high-priority feature set. This will help assess the user response, adjust the app accordingly, and make an informed decision on the next feature set expected by the users

Roadmap

Things to be implemented based on their priority

Too vague to estimate efforts	Clear enough to proceed to estimation
Features can be developed in any order	The first set of features have to be delivered by February 2018 so that we could demo the solution at an industry event. The remaining feature set must be delivered by May 2018 for us to pitch to investors. The app shall hit the App Store by the end of September 2018

Features

Verifying the selected set of features is mandatory, add value, support optimal UX, etc.

Too vague to estimate efforts	Clear enough to proceed to estimation
The solution is similar to Uber. Should allow booking a nearby service provider; track the delivery	For the end-user, the app will allow requesting shipment from a nearby shipping service provider; for the carrier, the app will allow responding to the user requests and map the delivery route; trucking companies will be able to add/remove/assign trucks; the admin system will help manage the entire solution

Scope Boundaries

No new features will be added outside of the agreed functional scope

Too vague to estimate efforts	Clear enough to proceed to estimation
I'd like the solution to allow working with trucking companies along with private shipping service providers	I'd like to expand the solution's capabilities. But since implementing additional functionality will affect the delivery deadline and exceed the budget, we'll add the new capabilities to the backlog and consider them after the release

Limitations

Deadlines, special events, patents, IP rights, certificates, funding, market situation, etc.

Too vague to estimate efforts	Clear enough to proceed to estimation
The solution doesn't have any restrictions for using in the U.S.	The app will work with an ELD system governed by the ELD mandate. The mandate regulates the way truck drivers log hours-of-service through automation (the limit: 73-hour 7-day work weeks)

Projects That Would Benefit from Discovery Phase

If your future project looks similar to any of the cases listed below, you may benefit from investing time and efforts into the Discovery phase. Relevant projects: **Innovative Product, New Domain, New Market, Unclear Scope, Unclear Goal, Regulated Environment, Unclear Feasibility, Unclear Stakeholders, Highly Competitive Market, Absence of IT Background, Complex Environment, High Risks, Limited Budget and/or Time, Huge Scope**

Innovative Product

Assess implementation feasibility, risks, functional health, potential roadblocks, etc. for a product that has never been done before

ⓘ *Can be used for **5 days without recharging***

New Domain

Understand what best practices you could adopt, if your solution needs to comply with specific standards, what expectations your target audience may have, etc.

ⓘ *Design, material specifications, performance, and inspection docs meet multiple electronics industry standards by IPC global trade association*

New Market

Assess the current situation on the market you're entering for trends, industry standards, competition to map out potential solution differentiators

Unclear Goal

Understand how the new solution will improve your business and identify an optimal strategy for achieving your goal

e.g., if you're in a car dealership, you may want to [automate the process of selling vehicles](). A mobile app may guide buyers through the car purchasing process and assist sales people in processing contractual docs on-the-fly

> ⓘ *Employs secure Amazon S3 cloud server*
>
> *Biometric Touch ID authentication*

Highly Competitive Market

Understand how saturated the market is with similar solutions to enable a more thoughtful solution design in terms of functionality, [UX and UI](), time-to-market, as well as assess the overall development necessity

High Risks

Check your idea for feasibility; get a clear outline of the mandatory implementation scope to prevent project over-/underestimation at the BA stage due to unidentified/redundant features. Especially recommended for hardware driven solution with mass production plans to avoid costly iterations at the trial production stage

Huge Scope

If your future solution has a complex business logic, integrates with hardware (e.g., sensors), is designed to cater for the needs of users with multiple business functions, putting down and prioritizing all the details will help keeping the project timelines and costs under control

You may have a limited budget, face a deadline pressure, lack technical knowledge, or be unaware of the industry-specific requirements to comply with, which are quite common cases. The Discovery phase will help obtain a comprehensive view of your development initiative. After this phase, you'll have a better understanding of what should be done next, what could be put aside, and what project results you could expect.

# What if You Start with Business Analysis Straight Ahead?

If you still prefer starting the project with Business Analysis, please keep in mind that some things may go not the way you had expected. The initial scope may increase, the deadline may shift, as well as the entire project costs may rise.

EXAMPLE

A client of Softeq wanted to create an Uber-like solution for private shipping service providers. That meant the solution would utilize a well-understood business process logic. The future implementation roadmap was settled. The team assessed the project scope and duration and estimated the efforts. Some additional facts surfaced during the BA phase. It appeared that besides private service providers, the client also decided to work with commercial enterprises engaged in shipping services. This implied a different, more complex business process logic, which entailed increase in the project scope, implementation time, and cost of the development.

Unlike the BA phase, the Discovery phase is flexible in shifting the requirements and expectations boundaries. It provides a better understanding of the major aspects that may affect the project flow: how large the project scope is, what major functional modules could be implemented, who could benefit from using the solution, how soon the solution could be delivered, and how much the development may approximately cost.

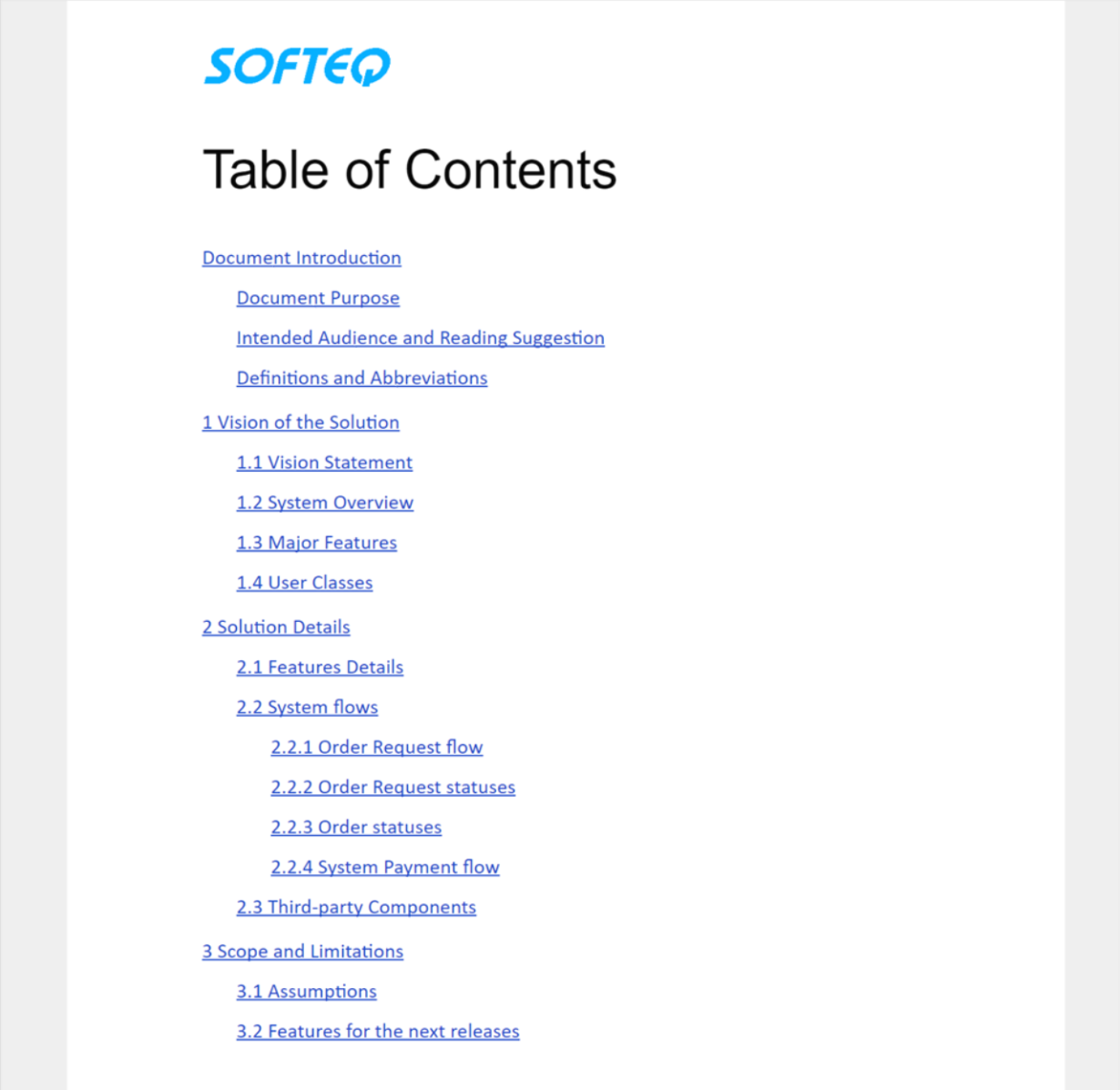# Discovery Phase vs Business Analysis Phase
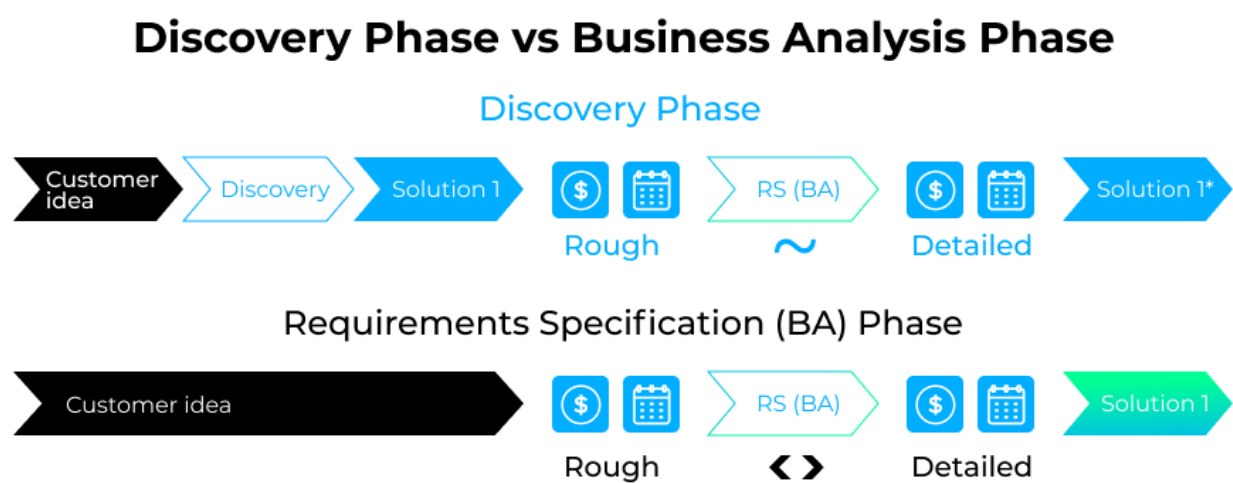
With Discovery Phase. During the Discovery phase, we'll assess your initial idea for general complexity, feasibility, scope size, and potential implementation duration. Based on this information, we'll set a rough estimation range for the required efforts. We'll use the Discovery phase findings to proceed to the BA phase. The result of the BA phase – a detailed project estimation of scope, duration, and cost. The major solution properties and project flow identified during the Discovery phase will remain within the expected value boundaries after the BA phase.

Without Discovery Phase. Since your initial idea may have hidden problem areas and information gaps, the estimation of the solution development scope, time, and cost made before and after the BA phase are likely to considerably differ.

Discovery Phase Deliverables

VISION AND SCOPE DOCUMENT

The Vision and Scope document maps out the future solution: its application areas, major features, key functional parts, user roles, and next implementation steps

OTHER ITEMS DELIVERED INCLUDE:

- Detailed estimations for BA phase
- Rough estimations for development
- Project Roadmap

How the Discovery Phase Works: the Process

We carry out the Discovery phase as workshops, Q&A interviews, brainstorming, mind mapping sessions. The tools and methods we use depend on the project – enhancement of an existing solution or from-scratch development. If you're up to a from-scratch solution development, we may use some of the methods listed below to identify efficient solution design strategies.

Our go-to methods and tools include: **Process Analysis, Functional Decomposition, Interface Analysis, User Stories,** etc.

Method/tool	Purpose	Value
Process Analysis	Helps analyze the existing processes for possible bottlenecks, and improvement options	Efficient process support: the solution addresses the right user needs and covers essential process steps

EXAMPLE

We may use the SIPOC diagramming (Suppliers, Inputs, Process, Outputs, Customers) to obtain a high-level understanding of your business process from start to finish. Its key steps will be: high-level flow of the process; outputs that come out of it; internal/external customers who use these outputs; inputs that make up the process; enablers that make the process possible; and suppliers of these inputs. The SIPOC diagram below illustrates a purchasing process on amazon.com:

Suppliers	Inputs	Process	Outputs	Customers
• Customer (Buyer) • Credit Card Bureau • PayPal	• Customer Information • Inventory Information • Payment Method & Details	• Purchase	• Order Details • Receipt • Product Purchased	• Customer (Buyer) • Order Warehouse • Credit Card Bureau • PayPal • Delivery Service

A process of purchasing a book on Amazon will output order details, book purchased, book delivery, and receipt. The users of these outputs are the buyer, order warehouse, delivery service, payment service, etc. To enable the process, such inputs as customer information, book information, payment details are required. The suppliers of these inputs are the buyer, payment service, etc.

Method/tool	Purpose	Value
Functional Decomposition	Aims to break down the processes, systems, functional areas, or deliverables into their simpler constituents to allow each part to be analyzed and estimated independently	Makes complex initiatives possible: broken into smaller parts, they become feasible Makes complex problems more manageable – smaller chunks of work enable a structured approach towards implementation and more precise estimations. Result: a better understanding of what needs to be done

EXAMPLE

Once functionally decomposed, user administration functionality may look as follows:

- User profile
- Edit/update profile
- Delete user
- Search/filter user
- Activate/deactivate user

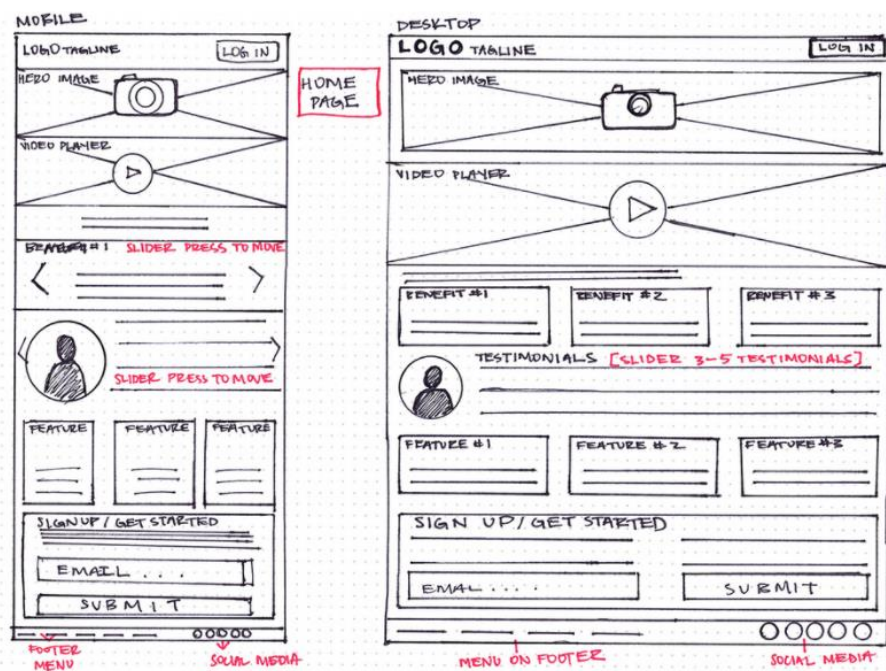| Method/tool	Purpose	Value
Interface Analysis	Helps identify: Types of interfaces (e.g., frontend + backend; frontend + backend + mobile; APIs, etc.) and protocols (TCP/IP, HTTP, etc.) to be employed in the future solution so that the solution units and components exchange information Type of the information to be exchanged Constraints to the way the information is exchanged	Enables better understanding of the capabilities the solution must have Helps define requirements, business rules, and constraints for the solution

EXAMPLE

Suppose you aim to create a 'smart home' solution that will push notifications (Requirement) to a smart watch upon an event (Business Rule). Besides smart home devices, you'll need a smart watch application (Requirement). Given the physical parameters of a smart watch – small size and limited functionality – the app will have to be developed with these properties in mind (Constraints).

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Method/tool	Purpose	Value
Sketching/wireframing	Helps validate stakeholders' needs using sketched wireframes and mockups based on stakeholders' requirements	Identifies uncovered solution requirements and yields relevant layout options

EXAMPLE

Wireframes are a great tool for working out an optimal UI and validating critical functional capabilities behind it. Are ideal for mobile and web solutions. For a quick idea, some hand-sketching could do.

Method/tool	Purpose	Value
User Stories	Aim at identifying requirements that are critical for including in the initial feature set (MVP) Help assess which development methodology would be right for the given project	Help keep track of the essential features in the solution Help assess if the future project is a good fit for the Agile methodology Serve as a basis for identifying and estimating smaller implementable and testable slices of functionality. Especially beneficial for Agile driven projects, which are focused on rapid feature implementation and incorporate user feedback

EXAMPLE

The User Stories below describe the options for users with different permissions to back up the hard drive data.

User Stories:

As an admin user, I can specify files or folders to back up important data. The backup parameters are: file size, date created, date modified.

As a user, I can indicate folders, which don't need a backup. I don't want my drive to store unnecessary data.

The features pending development will be as follows:

Admin User – select a destination for storing data based on specific parameters (size, date, etc.); User – select folders that require a backup.

Key Takeaways

The Discovery phase helps ensure you and the service provider share the same understanding of your major expectations of the future solution development. After the Discovery phase, you'll have a better idea of the future development's viability, limitations, scope, duration, and efforts. You'll have sufficient information to be able to assess the potential implementation risks, solicit guidance on mitigating them, make decision to proceed to the next phase, or present to investors for funding.

DISCOVERY PHASE VERIFIES:

1. The future solution has a strong potential to meet the demand of the target market

2. The future solution has prospects of accommodating the needs of the target audience

3. The solution's functional features are driven by a relevant business process logic

4. The mandatory set of features you've identified will be sufficient for releasing an MVP

5. The selected tech stack is the right technology to enable scalability, sustainability, maintainability of the end-solution

6. You're well aware of the implementation risks

7. You've secured a project implementation roadmap

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