Change analysis

> **CR2.**
>
> The client **wants to develop** a cloud version of the system for commercial purposes.

What does this change imply?

Data Security: Ensure the protection of student and teacher information during transmission.

Scalability: Ensuring that the cloud application can grow to handle larger numbers of users and workloads seamlessly.

Data Migration: Successful migration of existing data from on-premises to the cloud is critical to ensuring a smooth transition.

Costs: Manage costs associated with cloud infrastructure and services to ensure long-term business success.

Business Model: Define a solid business model for the cloud version, including how it will be monetized and users will be billed.

EFFORT					
CODE	**Work Hour**	**DESIGN**	**Work Hour**	**DOCUMENTATION**	**Work Hour**
Data Migration: Develop scripts and processes to migrate existing data from the on-premises application to the cloud infrastructure. **Maximum complexity: 4**	24h	Define the architecture of the cloud application, including the selection of key services and components, such as servers, databases, storage services, and load balancing. The architecture design should prioritize scalability, high availability, and security.	12h	Create a document that describes in detail the functional and non-functional requirements of the new cloud version. Includes information on scalability, security, accessibility, and business features **Minimal complexity:1**	4h

Scalable Architecture Design: Create an architecture that is scalable. This involves a load balancing strategy to handle a larger number of users. **Maximum complexity:4**	16h	**Maximum complexity:4**		Prepare a plan that describes the development, implementation and deployment strategy of the cloud version. **Minimal complexity:1**	4h
Cloud Services Integration: Deploy and configure cloud services, such as cloud databases, cloud storage, authentication and authorization services, and monitoring and logging services. **Maximum complexity:4**	16h			Document the data security, privacy, and regulatory compliance policies that will be applied in the cloud version. **Minimal complexity:1**	4h

General scheme for assigning points to complexity. Based on the experience of a team

Minimal Complexity (1 point): This category is used for tasks that are very simple and do not require a lot of time, effort, or resources. They can be completed quickly and easily.

Low Complexity (2 points): Low complexity tasks are a little more challenging than minimal complexity tasks, but are still relatively simple. They may require a little more time and attention, but they do not present a significant challenge.

Medium Complexity (3 points): Here we are talking about tasks that have a moderate degree of complexity. They require a significant amount of time and effort to complete, and may involve multiple steps or considerations.

Maximum Complexity (4 points): This level of complexity is assigned to tasks that are very complicated and can be challenging to manage. They may require careful planning and execution, involve multiple stakeholders, or present significant technical challenges.

To calculate the effort in percentage terms, the following formula will be used:

Effort (%)= (estimated hours + complexity) / 10

Where Estimated hours is the sum of the hours needed to complete each task, taking into account the previous effort table.

Complexity in the equation is the sum of the complexities of each task

The value 10 by which the sum is divided is an adjustment value.

Effort 10.2 %

TIME

The total estimated time for the original project is 6 months (1440 hours)

Based on the previous effort calculation, the time to make the changes in terms of coding, design and documentation is:

80 hours **equivalent to** 5.56%

BUDGET

The initial budget for the project is 113 528 MXN (473 MX for day)

The additional budget for this change is:

4730 $ MX **equivalent to** 4.17%

HUMAN RESOURCES

Additionally needed:

1 Cloud Architect: to design the cloud infrastructure, select appropriate services, and ensure the scalability, security, and availability of the cloud application.

1 DevOps Developer: to be in charge of the migration of the application to the cloud, the implementation of cloud services and the automation of deployment and operation processes.

1 Cloud Security Specialist: to ensure data security and compliance and to configure access and audit controls.

Total: 3 people

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CR3.

For accessibility purposes, the system should have help legends in written and spoken

forms, as requested by a new inclusion law taken into effect next month.

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What does this change imply?

User Interface (UI): Significant changes to the user interface. It should be clear and designed so that the legends are easily accessible and understandable.

EFFORT					
CODE	**Work Hour**	**DESIGN**	**Work Hour**	**DOCUMENTATION**	**Work Hour**
Add interface elements to display and activate help legends. **Medium complexity:3**	24h	Create and adapt help legend content to make it clear and useful to users. **Medium complexity:3**	24h	Requires providing detailed documentation to end users on how to use the help legends and how to access the spoken versión **Minimal complexity:1**	4h
Implement code that meets accessibility guidelines and perform tests to verify its operation. **Medium complexity:3**	24h	Ensure that the design is compatible with Screen Readers, that it can be read correctly through screen readers, as it helps users with visual disabilities. **Little complexity:2**	4h		

Develop and structure the content of help legends in the code in a clear and accessible way. **Little complexity:2**	4h				

Effort (%)= (estimated hours + complexity) / 10

Effort 9.8%

TIME

The total estimated time for the original project is 6 months (1440 hours)

Based on the previous effort calculation, the time to make the changes in terms of coding, design and documentation is:

84 hours **equivalent to** 5.83%

BUDGET

The initial budget for the project is 113 528 MXN (473 MX for day)

The additional budget for this change is:

4966 $ MX **equivalent to** 4.38%

HUMAN RESOURCES

Additionally needed:

1 Front-End Developer: to implement the help legends in the design and functionality of the application.

1 User Experience (UX) Designer – to work on creating the help legends to ensure they are intuitive and useful to users.

1 Sound engineer: to work on recording, editing spoken captions and ensuring sound quality

Total: 3 people

CR4.

The screens in the system **should change** to meet the company image criteria by adding the logos of the company on the system's screens.

What does this change imply?

Changes in the design and layout of the screens to incorporate the logos and guarantee an attractive and coherent interface.

EFFORT					
CODE	**Work Hour**	**DESIGN**	**Work Hour**	**DOCUMENTATION**	**Work Hour**
Modify style sheets (CSS) to adjust the appearance with the new design. It involves changing colors, fonts, margins, element sizes, etc. **Medium complexity:3**	8h	Redesign the user interface to reflect the company's new look and brand identity. This involves creating sketches, mockups and prototypes of the new screens and visual elements. **Maximum complexity:4**	40h	Design Documentation (Style Guide): Create a document that details design guidelines, including color palette, typography, button styles, icons and other visual elements. **Minimal complexity:1**	4h
Modification of Templates (HTML) to reflect the new design. It includes rearranging elements on the page, adding containers for logos, menus and other design elements. **Little complexity:2**	8h	Choose a color palette and fonts that are consistent with the company image and apply them throughout the design. Make sure colors are accessible and fonts are legible. **Minimal complexity:1**	4h	User Manual Update: update this documentation to reflect changes in design and layout. Users need up-to-date information on how to navigate and use the app in its new look. **Minimal complexity:1**	4h

Effort (%)= (estimated hours + complexity) / 10

Effort 8%

TIME

The total estimated time for the original project is 6 months (1440 hours)

Based on the previous effort calculation, the time to make the changes in terms of coding, design and documentation is:

68 hours **equivalent to** 4.72%

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BUDGET

The initial budget for the project is 113 528 MXN (473 MX for day)

The additional budget for this change is:

4020 $ MX **equivalent to** 3.54%

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HUMAN RESOURCES

Additionally needed:

1 graphic designer

1 web designer

Total: 2 people

Desirable criteria for considering approval of a change proposal

Budget: 3%

Time: 3%

H.R: 1

Effort: 5%

CR	Budget	Time	H.R.	Effort	Risk Exp.	L. Mandatory	First Approval	Ranking	Final Decision
CR1	**1.77%**	**2.36%**	**1**	**5.2%**	Low	Yes	Approved	1	**Approved**
CR2	4.17%	5.56%	3	10.2%	High	No	Approved	3	**Rejected**
CR3	4.38%	5.83%	3	9.8%	Medium	Yes	Approved	1	**Approved**
CR4	3.54%	4.72%	2	8%	Medium	No	Approved	2	**Rejected***

CR1 and CR3 they are **approved** because they are changes that respond to regulations mandated by law.

CR2 is **rejected** because it exceeds all desirable approval criteria, but it would be useful to perform an economic analysis to verify that the gains from commercializing the application exceed the additional resources needed to carry out the change. If feasible, implementing the change would be considered in a future version of the system.

CR4 CR4 is **rejected for the moment** because it exceeds the desirable approval requirements, but a new analysis with the client should be considered to determine whether or not the company's visual identity requires that the company logos be on all system screens , because in the change request it says "must" but it is not exactly specified that it is a company policy. If it is mandatory in the company's policies, the change must be approved and implemented.