

BUSINESS PROCESS ENGINEERING

PROJECT REPORT - 2022

Platform for sharing game consoles

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Abstract

Try Console has the main goal of providing consoles to players with low-budget. In the report, We modeled a business using BPMN notation. e3 value model used to analyze value. The model is also used to see the exchange of values. Last sections, We used critical success factors to define the goals and key performance indicators to measurement of the goals.

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1 Introduction

Nowadays, every 5 or 6 years, brands come with a newer version of game consoles. And not only with one console, but they are also producing one flagship model and one budget-friendly console. Brands want everyone from every economic class to buy their consoles. However, even if someone lives in developed or developing countries, most of the time, it is hard to afford to buy game consoles with a monthly salary. People are not even considering building Personal Computer to play more different games with higher quality than game consoles. Because they know that it costs 2 or 3 times more buying a new console. Our platform is more focused on countries like Brasilia or Turkey, where with a minimum monthly wage, people can not buy even a quarter of the Playstation 5. For instance, in Brasilia monthly minimum wage is approximately 220\$ [1], and PlayStation 5 retail price is 930 \$. The same examples can be given in Turkey or any other kind of country. Another reason for sharing game console platforms highly focused on this kind of country is the high amount of young population.

Business is comprised of 3 main actors. TRY CONSOLE, who is connecting the Owner with the User. TRY Console is the platform where Owners of the game consoles will lend their consoles to the Users. Users can select from different consoles on the platform. Since each console is in different conditions, Platform technicians will decide the lending price. Users can select subscriptions from weekly or monthly.

The business is modeled using BPMN notations. The business is further modeled using Business Process Execution Language. Value added by every three actors is shown with Value Model also includes value exchanges. In the end, the goals required for the sustainability of the business are shown in the form of critical success factors. The indicators required to measure success are defined in the form of KPIs.

2 Processes

2.1 User

Users are basically gamers who want to borrow and use game consoles. After entering the website, users register with the required information. Now they can get the list of the consoles and select among them. A deposit is taken in the invoice from the user. This deposit will be refunded after checking the console before being given to its owner. After the subscription ends, the user can give feedback about the owner and service process.

2.2 Try Console

2.2.1 Database

The Data process manages data flow. User databases store the new users and owners. Console database stores the game consoles which the owners list. Feedback database storing feedback from users to owners and owners to users and also storing feedback for the service itself

2.2.2 Try Console Service

Service or platform will provide a system for game consoles. This system contains a lot of different consoles lent by owners to picked by users. After a couple of user experiences, owners can also give feedback to the user about how they treat the console during the process so that there can be a rejection of the user. Service provides all of the processes with a budget-friendly amount for both actors. Also, the system checks for review and sends a warning message to individuals.

2.3 Technical Service

After the owner accepts the user, the console will be taken from the owner to check up. Technicians will decide the condition of the console, and if it is working correctly without any problem, consoles will be added to inventory. If there is a problem with the console, feedback is sent to the owner; With this way, owners have an idea about their consoles and what is wrong.

2.4 Owner

They called the owner because they own the console. After entering the system, they can list their console and lend it to accepted users after assessing the console condition. They also have a rejection method. After renting period ends, owners get their consoles with payment. The platform provides insurance during the process. Also, give feedback about the user and the service itself.

3 Business Process Flow

3.1 BPMN Diagram

3.2 Complete Business

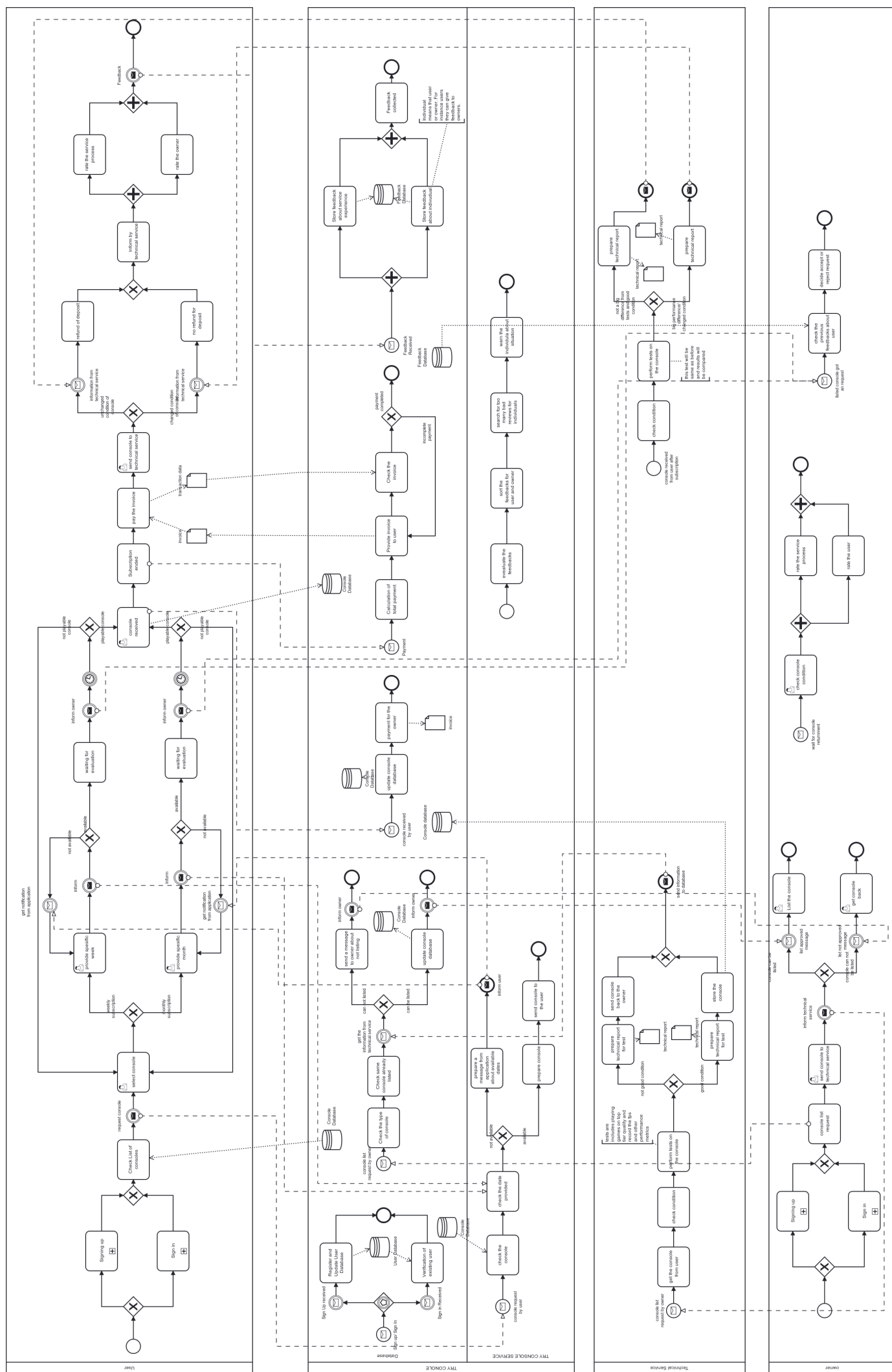


Figure 1: Try Console Complete BPMN Diagram

3.3 User

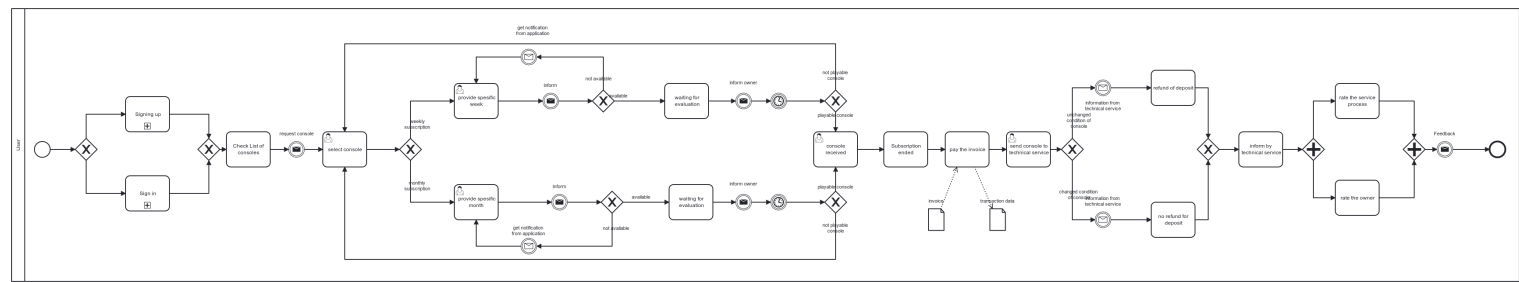


Figure 2: User BPMN Diagram

3.4 Try Console

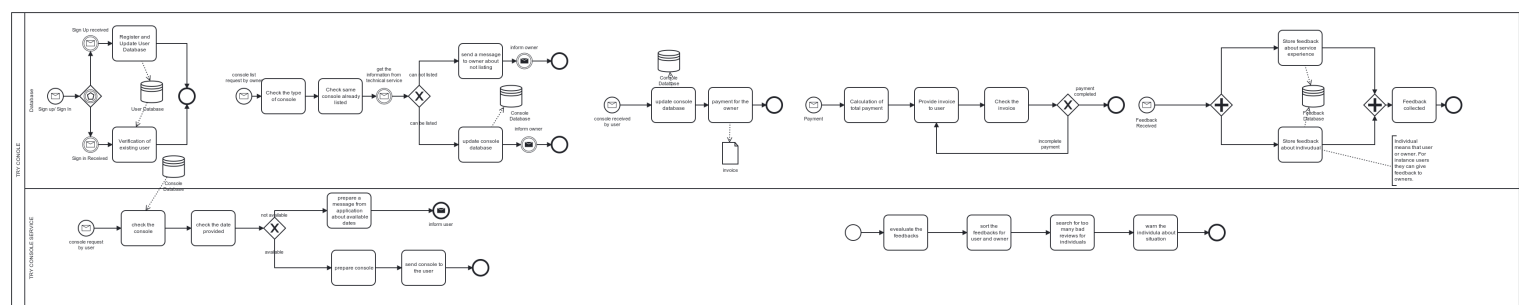


Figure 3: Try Console BPMN Diagram

3.5 Technical Service

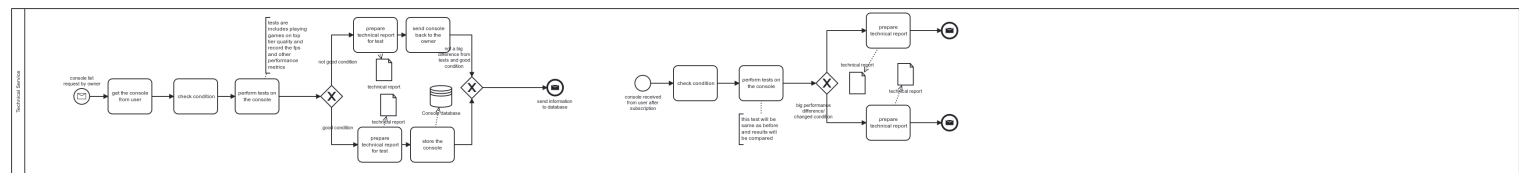


Figure 4: Technical Service BPMN Diagram

3.6 Owner

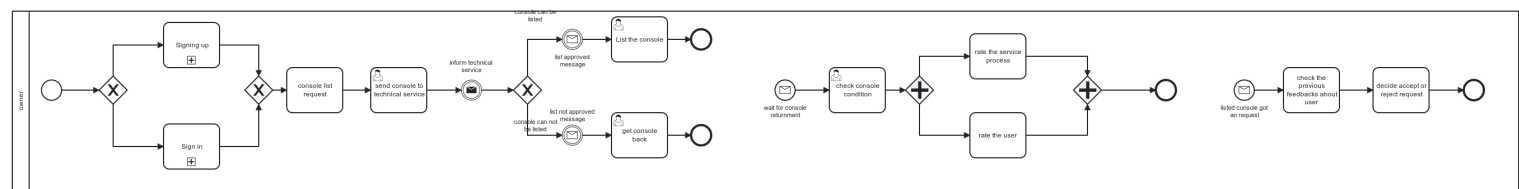


Figure 5: Caption

3.7 Sub Processes

3.7.1 Sign In

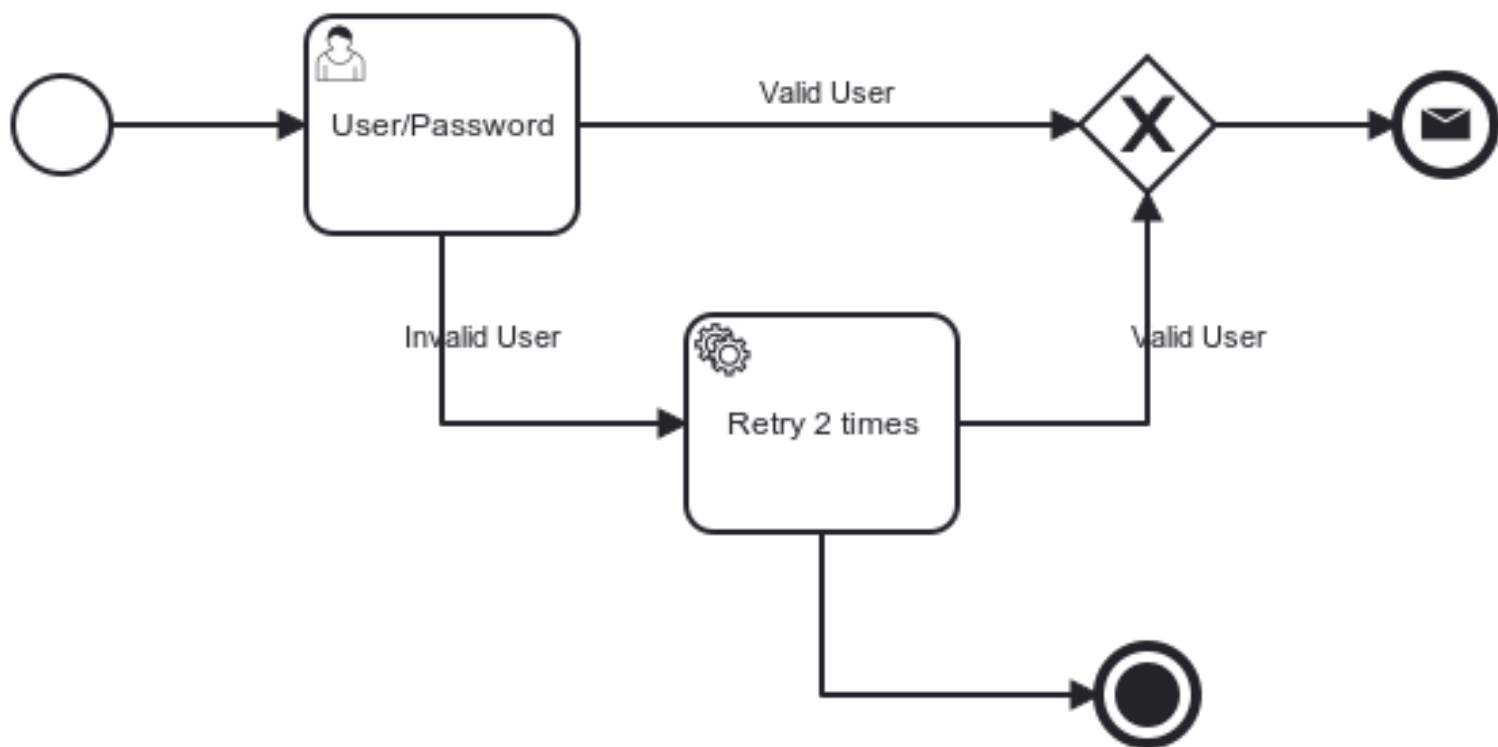


Figure 6: Sign In BPMN Diagram

3.7.2 Sign Up



Figure 7: Sign Up BPMN Diagram

4 Value Model

4.1 Actors

- Users - Market segment actor who subscribe to use console. User will get the console by Try Console application. The user will return the value by payment to Try Console.
- Owners - Market segment actor who provides console to Try Console Provided consoles are used for rent to users. After the subscription ends Owners in return get paid by Try Console if the consoles are still can be used.
- Try Console - Actor who connects the user and owner on the same platform.

The platform provides a list of consoles to the user and makes it possible to owner get paid for unused consoles. In return, the platform takes part of the payment for the technical service, shipment fees, and development of the platform.

- Developers - Actor who is responsible for the maintenance of the whole system.

By maintenance developers are responsible for the upgrades, database, user interface, and software bug fixes in return for payment. In return, they get paid by the platform.

- Technical Service - Actor who provides technical support and reviews for the console.

Service is responsible for evaluating the condition of the console before and after usage. In return, they get paid by the Try Console platform.

4.2 Value Diagram

Figure drawn with web tool developed by The Value Engineers (Jaap Gordijn and Roel Wieringa) [1]

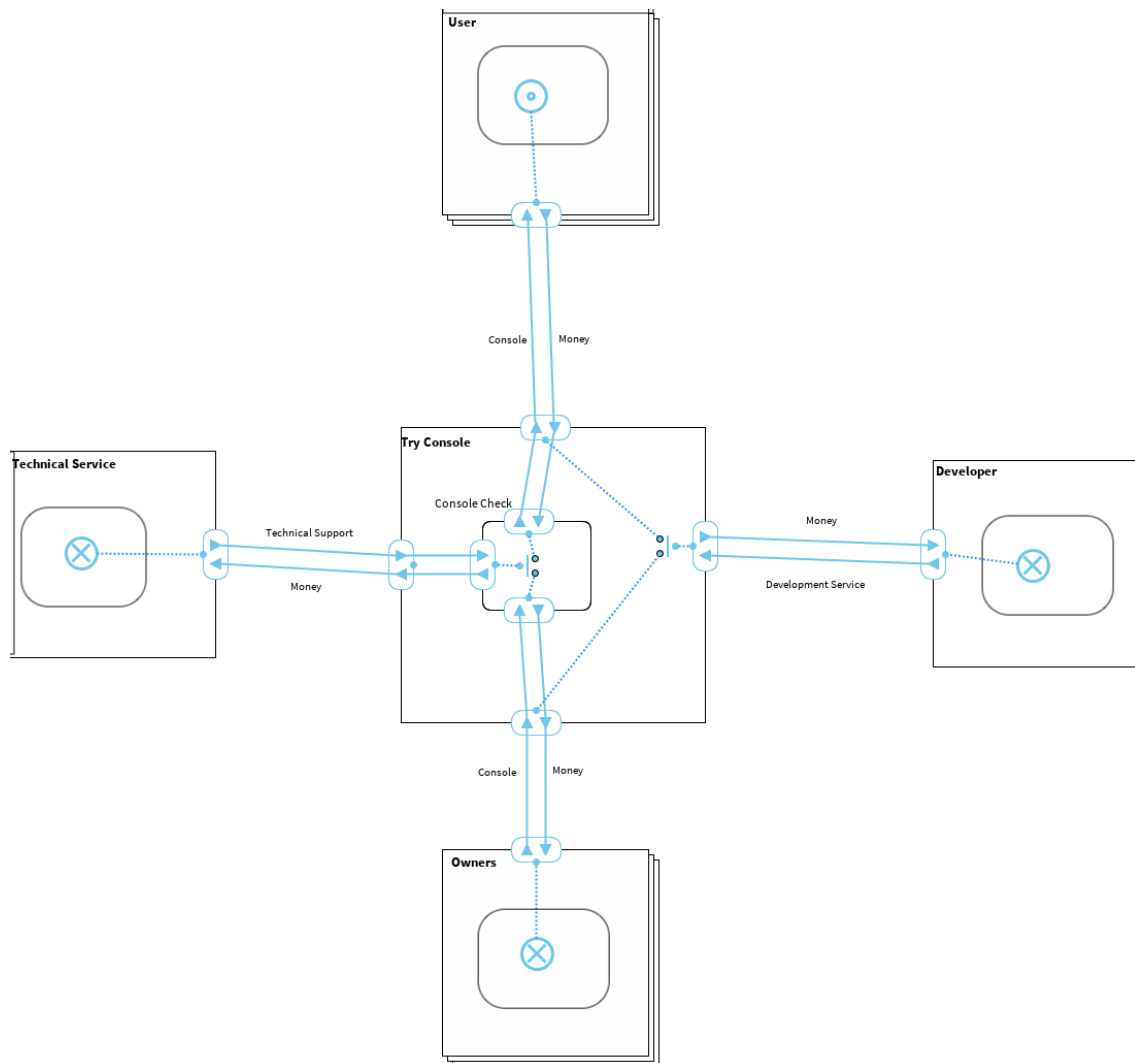


Figure 8: Value Diagram

5 Other Measures

5.1 Critical Successor Factors

The Critical Successor Factors (CSF) are activities, actions or elements that are necessary, for an organization or company, in order to achieve the objectives of the process both from the strategic point of view, but also from the technical and organizational point of view.

Critical success factors are those few things that must go well to ensure success for a manager or an organization, and, therefore, they represent those managerial or enterprise areas that must be given special and continual attention to bring about high performance.[2]

- **Number of Active Users** - More users will ensure more activity and more advertisement of the platform.
- **Number of Consoles** - The possibility of users renting consoles only happens when items are available for specified time.
- **Total Wait Time** - Time from selecting consoles to receiving them should be the small time as possible, no user would want to wait too long for the play games.
- **Competitive Subscription Fee** - None of the users wants always increasing subscription fee because of the inflation rate or other fees for the platform. Fees for the users need to be competitive.

5.2 Key Goal Indicators

The Key Goal Indicators (KGI) define the measures to verify if a process or an activity respects the imposed constraints and contributes positively to the initial objective.

- **Stable Increase of New Users** - Continuous addition of new users in the platform. For the new users it is important that they are active and potentially rent consoles.
- **Increase Number of Consoles** - Increasing number of consoles available for users. With number of consoles platform also providing the good condition of given consoles.
- **Decrease Evaluation Time of Consoles** - Time from console list request by owner and return of the console by user back to the Try Console platform. Both need time because of technical service evaluation.
- **Stable Subscription Fees for Users** - Providing more stable fees to users for compute with other renting companies during always increasing inflation rates.

5.3 Key Performance Indicators

Key Performance Indicators (KPIs) are the critical (key) indicators of progress toward an intended result. KPIs provides a focus for strategic and operational improvement, create an analytical basis for decision making and help focus attention on what matters most. [3]

The Key Performance Indicators (KPIs) allows to measure the success factors represented by the different activities, in particular they allow to verify if the activity is carried out properly and to determine the bottlenecks of the system.

- **Rate of Addition of New User** - Number of Active users in the platform
- **Ratio of Consoles/Users** - Ratio of consoles available for lending
- **Average Wait Time for Technical Operations** - Average time from selection of console to receive of console
- **Ratio of Subscription Fees/Inflation Rate for Current Country** - Ratio of subscription fee with the Inflation Rate.¹

5.4 KPI in Practice

KPI	Criteria of Evaluation	Outcome
Rate of Addition of New User $\mathcal{R} = \left(\frac{\text{Number of new user in a day}}{\text{Total number of user}} \right) \%$	$\mathcal{R} < 0.01\%$ $0.01\% < \mathcal{R} < 0.05\%$ $\mathcal{R} > 0.05\%$	Negative Positive Over the Limit
Number of Consoles per User	$\mathcal{F} < 2$ $2 < \mathcal{F} < 10$ $\mathcal{F} > 10$	Negative Positive Negative
Avg(Number of days from selection to receive)	$\mathcal{D} < 3$ $\mathcal{D} > 3$	Positive Negative

¹Since it is hard to select criteria of Evaluation for each country's inflation rate, Ratio is not considered in the KPI in Practice table.

6 Conclusion

Operations of the company has been modeled by several techniques and these techniques allowed us to identify how to speed up processes and with that steady growth of the company. With identifying factors and indicators in the Critical Successor Factors and Key Performance Indicators it was possible to speed up the times and identify the most suitable elements and time slots to achieve this purpose. Also BPMN diagram allowed us to understand the inside process and how processes evaluated from the business. With the help of the diagrams even non-experts on the business process field can be easily understand process.

References

- [1] - For drawing e3 value model <https://e3value-user-manual.thevalueengineers.nl/>
- [2] - An Assessment of Critical Success Factors Andrew C Boynton; Robert W Zmud Sloan Management Review (pre-1986); Summer 1984; 25, 4; ABI/INFORM Global pg. 17
- [3] - <https://kpi.org/KPI-Basics>