



The Business Case for a Mojaloop Payments Hub



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At the Mojaloop Foundation we believe that the Mojaloop Open-Source Software (OSS) offers an optimized approach to creating an inclusive instant payments system (IIPS) that will support financial inclusion for all. We also recognize that implementers of new payment systems have a range of technology choices for the payments system hub.

To assist governments and payments industry executives around the world as they contemplate IIPS developments, we commissioned Glenbrook Partners to create an Inclusive, Instant Payments System Hub Estimator (referred to here as the “Estimator”) to compare the core business case among different hub options. Importantly, the Estimator draws upon Glenbrook’s unbiased understandings from real world implementations paired with expert interviews to provide users an objective idea of the cost considerations for a new IIPS and variations between the different hub options. Due to current lack of data, the estimator notably does not take into consideration the very difficult to estimate costs of constant iteration or the lower operational costs due to Mojaloop’s design, particularly for non-banks and small financial institutions.

This paper introduces the Estimator and summarizes findings from an illustrative analytical exercise performed by Glenbrook Partners to evaluate the costs of different options to create and operate new IIPS hub, as well as the time to market of each option. Specifically, by testing the two hypotheses below, this paper explores how a Mojaloop OSS IIPS hub compares to a Vendor Procured (specifically, licensed) or proprietary built IIPS hub:

1. A Mojaloop OSS IIPS hub can decrease overall costs (to develop, to implement, to operate/maintain) relative to *both a Vendor Procured (licensed) and a Proprietary Build hub*
2. A Mojaloop OSS IIPS hub can be faster to go-live relative to *both a Vendor Procured (licensed) and a Proprietary Build hub*

These two propositions are critically important because not only are they among the most common questions asked about Mojaloop OSS but they speak to the very core of Mojaloop's value proposition to enable financial inclusion for all.

What Makes Mojaloop OSS unique?

The Mojaloop OSS acts as an accelerator for an IIPS, enabling Schemes to collaborate with a common standard that is maintained by the Mojaloop Foundation (a charitable non-profit organization) as a digital public good. Mojaloop has some key aspects that make it different from most other Hubs you’ll find in the market now.

Ubiquity: Mojaloop is designed to enable ubiquity, connecting all Digital Financial Service Providers (DFSPs) and customers in a country or regional economy, routing payments from anyone to anyone, securely, and for immediate finality.

Modular and Extensible: Mojaloop is built entirely with **microservices**, making it very modular and easy to update and adjust. Mojaloop can be used whole, or adapted, to build an IIPS. Once an IIPS is live, rather than relying on a vendor to upgrade or respond to an expensive and time-consuming change request, users can take advantage of new capabilities introduced by the community or hire community members to build new capabilities at a lower cost.

Safe and Secure: The Mojaloop OSS leverages **modern cloud architecture** and has undergone rigorous development and testing, including security testing. It does not rely on blind trust of employees, and instead leverages best in class security protocols, role-based access control, and cryptography. New implementers get that investment free.

High Impact: Mojaloop’s open source blueprint removes barriers—including time, money, and technical complexity—that have hindered payment models from meeting the digital financial needs of the world’s 1.7 billion unbanked people. The financial inclusion principles behind the design of the Mojaloop open source software empowers organizations to create payment models that uniquely meet the needs of the underserved with safe, trustworthy, inclusive digital financial services available at low or no cost.

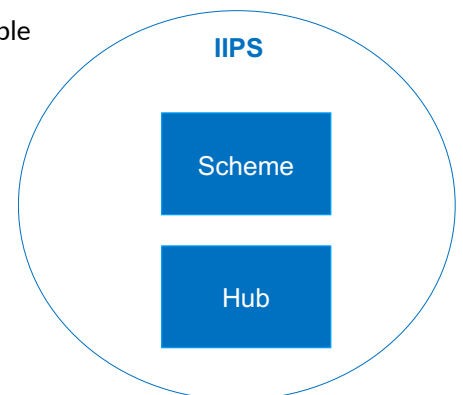
Background

About Inclusive Instant Payments Systems (IIPS)

An IIPS is a digital financial services system that facilitates instant, irrevocable transactions. It is a foundation for ubiquitous, low-cost retail transactions and supports not only financial institutions but also users—individuals and merchants—to more affordably access the formal financial ecosystem. As a result, it is a cornerstone of financial inclusion.

An IIPS is comprised of two components: a scheme and a hub, where a scheme is a set of rules, standards, and policies that govern major IIPS activities, and a hub is the technologies that route credit transfers between Digital Financial Services Providers (DFSP) and may provide additional functions and features.

The scheme and the hub of an IIPS are highly interconnected – choices made for one component influence and may significantly impact the other component. As such, key to the scheme’s success, and the overall business case of an IIPS, is choosing the right foundational technology for the hub.



Considerations when establishing an IIPS

An IIPS team often asks, *‘what are options for establishing an IIPS hub?’* There is no single answer to this question because the needs of each system will vary based on the individual business requirements along with the availability of market-ready solutions or OSS code to fulfill those requirements.

Against this backdrop, the Estimator and this illustrative analysis cater for the different combinations of requirements and availability. There are two main methods to creating an IIPS hub and these are to buy/rent or to own/build the solution. Each of these methods have two options, creating a total of four hub solution types.

At a high level, solutions can be bought or rented from a vendor, which typically means the vendor provides updates but also creates an ongoing obligation to pay for use of the software. Conversely, solutions can be owned outright through a Proprietary Build or use of OSS software, whereby owner retains the full rights to the software and must ensure its updating. These four hub solution types are defined below:

Procurement (buy/rent) from a vendor:

1. A Vendor Procured (licensed) hub: solutions licensed from a vendor
2. A Software as a Service (SaaS) hub: solutions using a vendor's software as a service

Development (own/build):

1. A Proprietary Build hub: solutions built as proprietary software
2. A Mojaloop hub: solutions leveraging the Mojaloop OSS

Aspiring implementers need to determine which IIPS hub option is best suited for a given market or context. This is a complex, multi-faceted decision that should be considered deeply. A few questions we see consistently asked that help inform that decision, include:

- Which hub option is the most cost-effective, both initially and over the long-run?
- Which hub option is the fastest to go-live?
- Can the hub support a cost recovery plus investment model?

About a cost recovery plus investment business model for the hub

Best practices to increase financial inclusion recommend inclusive payments systems (scheme and hub) reflect a business model where payments are a utility. Therefore, fees paid by DFSPs to the payment system should be minimized to cover only necessary development, implementation, and maintenance costs of the hub and planned investments, hence 'cost recovery plus investment'. When hub fees are low, DFSPs can in turn, keep transaction fees to end users at zero or a very low amount.

The Estimator can help answer these questions by breaking down the varying hub options and by comparing the different hub options with each other.

About the Estimator

The Estimator helps decision makers compare hub options and explore the projected impact of various hub choices on overall revenues and expenses. The Estimator leverages informed, market-based assumptions from experts and requires various inputs and adjustments from the user to arrive at forecasted profit and loss estimates for each type of hub option. The following articulates noteworthy features and categories of the Estimator.

The IIPS hub

IIPS hubs are comprised of multiple software components to provide robust, resilient, and secure payment services. Two distinct categories of components relate specifically to the payment system:

- **Core payments software:** Core payments hub activities include transaction services, account lookup services, settlement services, reporting, portal, and third-party initiation capabilities.
- **Supporting components:** Shared services for the payments system which include services like merchant registration, dispute management, QR code provisioning, and fraud management services.

IIPS hubs that are procured (either licensed or SaaS) externally range widely in terms of included supporting software components, which impacts the total cost of the IIPS hub. The Estimator assumes an IIPS hub that provides the core payments software. All else being equal, we assume that a Mojaloop OSS solution requires some expense to augment the core payments software while a Vendor Procured solution absorbs more of the cost associated with supporting components into the base vendor fee. The cost for additional components relevant to each IIPS instance can be captured in the “Customization and Localization Expense.”

Time horizon

Another important characteristic of the Estimator is that it is based on a ten-year horizon. While many financial models are five-year projections, this Estimator stipulates a ten-year timeframe because the additional time is typically needed to recover costs for large scale investments. The longer timeframe is a pragmatic choice and an especially important one for an IIPS implementation where a cost recovery plus investment model is in place, favoring low fees over higher fees which are often found in a profit maximizing business model.

Infrastructure

IIPS decision makers must choose the type of infrastructure, meaning the computing services, including hardware, operating systems, and other software, necessary to support the hub. There are three primary approaches to infrastructure that a user could consider, each with its own benefits:

- **a wholly owned on premises approach:** a group of servers that are privately owned and controlled on the premises of the organization
- **a cloud-based approach whereby the cloud is dedicated to the IIPS:** computing services that are located either remotely or on-premises and provided by a third-party service provider, but dedicated to single organization
- **a cloud-based whereby the cloud is publicly shared:** computing services that are located at distributed remote facilities, leased from a third-party service provider, and shared with several organizations

To ensure fair comparison of costs across hub options, the analytical exercise assumes a wholly owned, on premises infrastructure approach. However, when using The Estimator, the user should update cost assumptions and toggle between the on premises and cloud-based approaches to model the costs associated with each deployment approach.

Input categories

To provide a more accurate reflection of each market's circumstances, the Estimator requires inputs from the user to generate outputs. Input categories include:

- **Market characteristics:** population statistics and digital transaction volume and value estimates by use case
- **System transaction projections:** use case launch schedules and market penetration rates
- **Institutional adoption estimates:** direct and indirect participant adoption rates
- **Pricing inputs:** estimated investment revenues, subscription fees, and transaction fees
- **Standard costs:** infrastructure costs, depreciation schedules, marketing costs, training costs and ancillary services costs
- **Unique hub option costs:** solution development costs, solution implementation costs, and solution maintenance/operating costs

These categories are configurable and adjusting them allows implementers to better understand the impact of each on their own IIPS ecosystem.

Output categories

The Estimator produces outputs for the user to analyze their hub options. Output categories include:

- **Forecasted IIPS volume projections** for each hub option, overall and by use case with worst, base, and best-case scenarios
- **Forecasted IIPS revenue projections** and revenue composition for each hub option
- **Forecasted cost projections** and expense composition for each IIPS hub option
- **Forecasted P&L for each IIPS hub option**
- **Forecasted cash flow for each IIPS hub option**

Dynamic calculations of the Estimator

Though we introduce the inputs above as discrete factors, many of the input values are combined into formulas that calculate the various outputs. These formulas can be complex and are hidden to ensure usability. For example, the annual hub transaction volume estimates use multiple static inputs, each with a

corresponding growth rate estimate, that compound, annually. These volume estimates are then used to calculate incremental hub investment expenses that will be needed to scale the hub. Consequently, the year in which incremental investment expenses are estimated to occur is dynamically calculated from overall hub transaction volumes.

Applying the Estimator to evaluate the hypotheses

Considering the different starting points and needs that may exist for any implementation, no single hub option is likely to fulfill all possible system requirements. Some Vendor Procured solutions (licensed or SaaS) include additional features while others are essentially core switching. Similarly, some entities that build their own proprietary IIPS hubs choose to add additional components. Lastly, all solutions rapidly evolve with functionality frequently being added. All these factors reflect a real-world fluidity that no model can fully capture. However, the Estimator does provide a solid comparison of the models using facets important at the time of publication.

The Estimator and findings articulated in this analysis were developed in 2024, using market information available for IIPS hubs. The findings below reflect an illustrative analytical exercise, where the same input variables were applied to each type of IIPS hub option so that the effects are equal across the different options. Details regarding the inputs used for the illustrative analytical exercise are in the Appendix.

Findings from the illustrative analytical exercise

Hypothesis 1 is confirmed: *Our findings suggest that a Mojaloop hub can decrease overall costs relative to both a Vendor Procured (licensed) and a Proprietary Build hub.¹*

As with any new technology, IIPS hub costs are generally categorized as the costs to start up the hub and the ongoing costs to implement or operate it.

- Initial investment expenses are up-front costs, incurred at project launch, for example, the licensing or building of infrastructure.
- The second type of IIPS hub cost is ongoing operating expenses, which are the annual ongoing expenses, including but not limited to employee salaries, software licensing fees (if applicable), participant integration and training costs, networking and marketing costs, and infrastructure operations and maintenance costs.

¹ The illustrative analytical exercise does not include SaaS as there is insufficient market data to provide representative SaaS costs. However, the Estimator provides the user the ability to configure the Vendor Procured solution to reflect a SaaS solution while inputting the associated SaaS vendor fees

As shown in Figure 1 below, a Mojaloop hub benefits from low initial development expenses as the OSS modules are themselves free, requiring only the cost for local customization and integration. This results in a low initial investment cost. Additionally, implementation teams are not required to purchase or build upgrades for OSS modules as they are maintained by the OSS community, contributing to low ongoing expenses.

Alternative hub options may have higher initial and/or ongoing expenses because:

- A Vendor Procured (licensed) hub requires sizeable costs for both initial and annual software licensing.
- A Proprietary Build hub requires significant resource investments for design and development that create high upfront and ongoing costs.

These illustrative analytical exercise findings are shown in Figure 1 where the Mojaloop OSS hub requires the lowest initial investment expense. Similarly, the Mojaloop hub requires the lowest annual ongoing expenses.

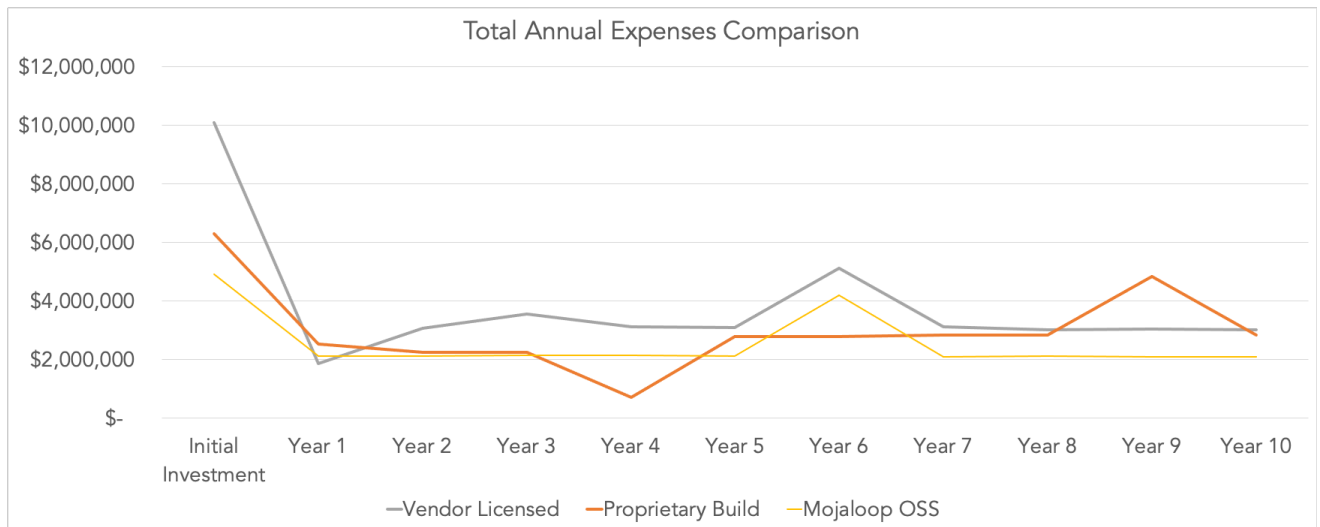


Figure 1

Figure 1 shows the total expenses by hub option. This chart highlights:

- The initial investment expense is the highest for a Vendor Procured (licensed) solution and lowest for a Mojaloop OSS solution.
- Following the initial investment, in Year 1, the Mojaloop OSS hub has the lowest cost, as all vendor related expenses (e.g., customization and implementation expenses) are incurred at project initiation and no additional hub software licensing fees are required. Compared to the Mojaloop OSS hub, the Proprietary Build solution has higher costs in Year 1 due to the technology labor required for the continued development of the hub.
- After year 1, the Mojaloop hub, along with the Proprietary Build hub show lower annual, ongoing expenses than the Vendor Procured (licensed) hub, as the annual licensing fee to the vendor is higher than the ongoing costs (e.g, operational and maintenance expenses) to maintain OSS and/or proprietary software.

- There is a large expense modeled in various years across all hub options, as the IIPS requires additional infrastructure investment due to the need to scale capacity to accommodate increased transaction volume. This incremental infrastructure investment expense occurs in different years, for each hub option, a result of different go-live years.
- As a separate note, there is an odd decline in costs for the Proprietary Build solution in Year 4. This is because as the hub solutions go live, development costs decrease before ongoing operational costs kick in.

Hypothesis 2 is confirmed: *Our findings suggest that a Mojaloop hub can be faster to go live relative to both a Vendor Procured (licensed) and a Proprietary Build hub.*

In any hub implementation, the speed to go-live depends upon a range of factors, chiefly the amount of labor required to develop (if applicable) or customize and then implement the hub, and the number of workers hired to conduct the labor.

A Mojaloop hub does not require building a majority of or the entire hub core software code from scratch (as in a Proprietary Build scenario) or reliance on an external vendor to assist with the implementation (as in a Vendor Procured (licensed) scenario), which are processes that can lead to significant delays to go-live. Instead, the Mojaloop hub core software is ready for use, and requires only customization efforts to tailor it to the local requirements. As a result, the hub can be customized and implemented more quickly relative to the Vendor Procured (licensed) and Proprietary Build hubs. These findings are confirmed, shown in Figure 2, where, in this illustrative analytical exercise, the Mojaloop OSS hub goes live before both the Vendor Procured (licensed) and the Proprietary Build hubs.

Figure 2 below shows the timeframe of the hub go-live, by hub option, including years during which the hub is being built and/or implemented, depending on the solution, the year that the hub goes live, and the subsequent years of live operations.

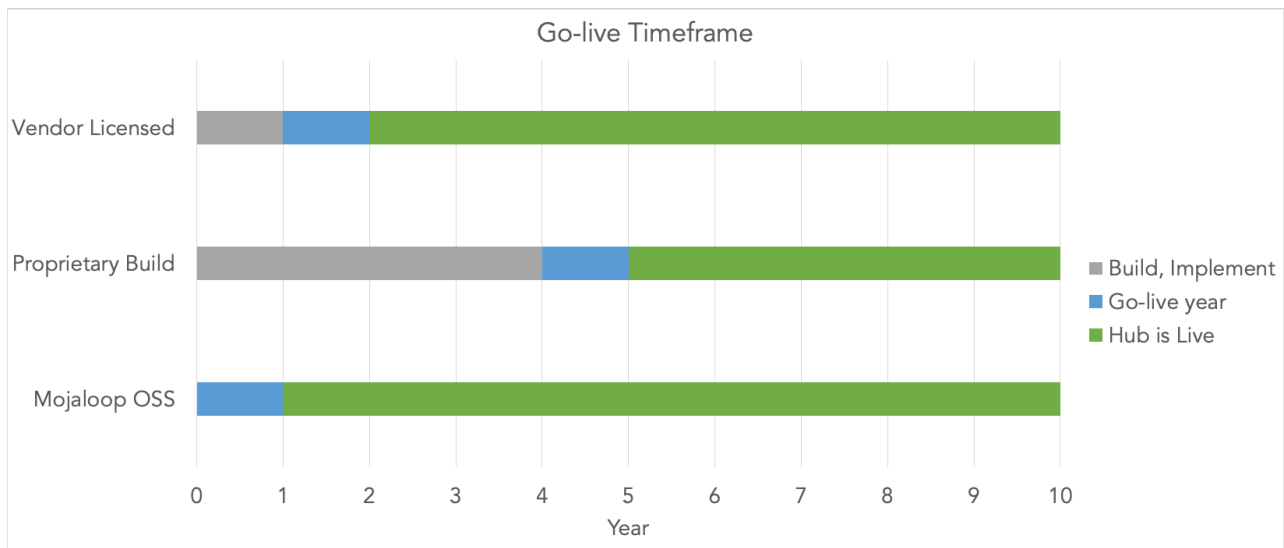


Figure 2

This chart highlights:

- The Mojaloop OSS solution is the first hub to go-live, which occurs in the first year because this hub option requires the least amount of initial labor effort.²
- The next hub to go-live is the Vendor Procured (licensed) solution, and finally the Proprietary Build solution is the last to go-live, the later due to the amount of time required to develop the proprietary hub software.

Combined findings analysis

Illustrative outputs suggest that a Mojaloop OSS IIPS hub can support establishing a cost effective and time efficient inclusive payments system. As a result, a Mojaloop OSS IIPS hub may also support a cost recovery plus investment business model, with very low transaction fees to digital financial services providers (DFSPs). This is evident in the cash flows required to get to a zero Internal Rate of Return (IRR)³, or cost-recovery model, in this illustration. The Mojaloop IIPS hub requires the smallest revenue total to get to cost recovery, which is essential to help support low end-user costs, and ultimately, support the environment that is needed for financial inclusion to flourish.

Concluding thoughts

Regulators, industry associations, and commercial organizations should consider the benefits and risks of all hub options when establishing an IIPS to cultivate the delivery of affordable digital financial services. The trade-offs among initial costs, ongoing investment needs and time to market are demonstrated in the illustrative analytical exercise provided here.

To receive a copy of the Estimator, which can be used to help determine the potential expenses and revenues for a specific deployment, please email operations@mojaloop.io.

² Because the Mojaloop OSS solution goes live in the first year, all build and implementation efforts occur in that year with the solution going live after these efforts are complete

³ *Vendor Procured (licensed): \$4.7MM per year for nine years = \$42.3MM total; Proprietary Build (PB): \$5.5MM per year for six years = \$33.0MM total; Mojaloop OSS: \$2.9MM per year for ten years = \$29.0MM total

Appendix

Inputs for analysis

The above findings are based on a set of inputs and choices. These inputs and choices may be configured in the Estimator to reflect the unique characteristics in each market, thus providing outcomes tailored for each IIPS instance.

The choices used for this illustrative analytical exercise include:

| Input | Value | Explanation |
|--------------------------------|------------------|---|
| Market Sizing | | |
| Population Total | 80,000,000 | |
| Population Growth Rate | 3% | |
| Mobile Penetration | 60% | |
| Mobile Penetration Growth Rate | 7% | |
| Market 1 | Persona 1 | High level of digitization, lower middle income classification, large population size |
| Market 2 | Persona 3 | Moderate level of digitization, lower middle income classification, large population size |
| Market 3 | Persona 5 | Low level of digitization, low income classification, small population size |
| Hub Transaction Inputs | | |
| Penetration Type | | Rate of digital payment adoption in the market by all adult, mobile phone users; Input values informed by actual rates of adoption experienced by nations which implemented an IIPS |
| P2P | High | |
| P2B | Medium | |
| P2G | Low | |
| B2P | Low | |

| Input | Value | Explanation |
|---|--------|---|
| G2P | High | |
| B2B | Low | |
| G2B | Low | |
| B2G | Low | |
| Launch Year | | Year in which the specific use case will be operational on the hub; Input values informed by actual launch schedules of nations which implemented an IIPS |
| P2P | Year 1 | |
| P2B | Year 2 | |
| P2G | Year 3 | |
| B2P | Year 4 | |
| G2P | Year 2 | |
| B2B | Year 4 | |
| G2B | Year 4 | |
| B2G | Year 4 | |
| Institution Adoption Inputs | | |
| Institution Adoption Rate | Medium | Growth rate at which institutions connect to the hub over a 10 year time period |
| Number of institutions that will eventually connect to hub | | |
| Commercial Bank Participants | 30 | |
| Non-bank Participants | 5 | |
| Indirect Participants | 0 | |
| Other | 0 | |

| Input | Value | Explanation |
|--|-------|--|
| Days required to connect to the hub | | |
| Vendor Procured | | |
| Commercial Bank Participants | 60 | |
| Non-bank Participants | 60 | |
| Indirect Participants | 60 | |
| Other | 60 | |
| Proprietary Build (PB) | | |
| Commercial Bank Participants | 60 | |
| Non-bank Participants | 60 | |
| Indirect Participants | 40 | |
| Other | 40 | |
| Mojaloop OSS | | |
| Commercial Bank Participants | 30 | |
| Non-bank Participants | 30 | |
| Indirect Participants | 20 | |
| Other | 20 | |
| Shared Inputs | | |
| Discount Rate | 4% | Rate used to discount the value of cash flows to account for the time value of money |
| % of Investment Paid In Period 1 | 30% | |
| Investment Depreciation Timeline (years) | 5 | |

| Input | Value | Explanation |
|---|-------|-------------|
| Labor Costs per Day | | |
| <u>Non-IT Labor</u> | USD | |
| Low (e.g. local, general staff) | \$200 | |
| Medium (e.g. local, advanced staff) | \$400 | |
| High (e.g. other consultants and contractors) | \$650 | |
| <u>IT Labor</u> | | |
| Low (e.g. local, general staff) | \$200 | |
| Medium (e.g. local, advanced staff) | \$400 | |
| High (e.g. other consultants and contractors) | \$650 | |
| Number of Laborers for Implementation | | |
| <u>Non-IT Labor</u> | | |
| Low (e.g. local, general staff) | 20 | |
| Medium (e.g. local, advanced staff) | 10 | |
| High (e.g. other consultants and contractors) | 5 | |
| <u>IT Labor</u> | | |
| Low (e.g. local, general staff) | 20 | |
| Medium (e.g. local, advanced staff) | 10 | |
| High (e.g. other consultants and contractors) | 5 | |
| <i>Modifier - Infrastructure Expenses</i> | 0% | |

| Input | Value | Explanation |
|---|-----------|--|
| | USD | |
| Marketing Costs | \$75,000 | Input values informed by expert interviews |
| Internal Team Training Costs | \$3,000 | Input values informed by expert interviews |
| Participant Training Cost One-time | \$2,500 | Input values informed by expert interviews |
| Hub Costs and Modifications | | Additional expenses and any modifications made to shared inputs, by hub option |
| Vendor Procured | | |
| Customization and Localization Expense | \$500,000 | |
| <i>Modifier - Number of Laborers</i> | 0% | |
| <i>Modifier - Implementation days</i> | 0% | |
| Software maintenance (or license fee) costs | 20% | Vendor Procured hub requires an annual licensing fee paid to the vendor for the hub software |
| Change Requests | 2% | % of the initial hub procurement costs |
| # of Change Requests | 5 | |
| Proprietary Build (PB) | | |
| Customization and Localization Expense | \$0 | |
| <i>Modifier - Number of Laborers</i> | 25% | |
| <i>Modifier - Implementation days</i> | 0% | |
| Software maintenance (or license fee) costs | 0% | |
| Change Requests | 0% | |
| # of Change Requests | 0 | |

| Input | Value | Explanation |
|---|-------------|--|
| Mojaloop OSS | | |
| Customization and Localization Expense | \$1,000,000 | |
| <i>Modifier - Number of Laborers</i> | 0% | |
| <i>Modifier - Implementation days</i> | 0% | |
| Software maintenance (or license fee) costs | 0% | |
| Change Requests | 0% | % of the initial hub procurement costs |
| # of Change Requests | 5 | |
| Pricing | | |
| Annual Fees | | Annual fee paid by institution to be connected to the hub; Input values informed by industry benchmarks from developed countries |
| Commercial Bank Participants | 6,000 | |
| Non-bank Participants | 6,000 | |
| Indirect Participants | 6,000 | |
| Other | 6,000 | |
| One Time Fees | USD | One time fee incurred by institution when they initially join the hub |
| Commercial Bank Participants | \$0 | |
| Non-bank Participants | \$0 | |
| Indirect Participants | \$0 | |
| Other | \$0 | |
| Investment Revenue | USD | Monies received to support the IIPS hub development |
| NGOs | \$0 | |

| Input | Value | Explanation |
|---------------------------------------|------------|--|
| Parent Organization | \$0 | |
| Price Per Transaction | USD | Revenue paid to the IIPS for each transaction; Input values informed by comparable IIPS's focused on financial inclusion and using a cost recovery plus investment model |
| P2P | \$0.002 | |
| P2B | \$0.002 | |
| P2G | \$0.002 | |
| B2P | \$0.002 | |
| G2P | \$0.002 | |
| B2B | \$0.002 | |
| G2B | \$0.002 | |
| B2G | \$0.002 | |
| Annual Price Decrease Per Transaction | 0% | As the hub scales, a reduction in the price per transaction can be implemented. No annual price reduction is modeled in this analytical exercise. |

Key Definitions

| Term | Definition |
|---|---|
| Digital Financial Services Providers (DFSPs) | A bank or non-bank financial services provider that is licensed by a regulatory authority to provide Transaction Accounts which hold End User funds and are used to make and receive Payments |
| Hub | The technologies that route transactions from one Digital Financial Services Provider (DFSP) to another DFSP and may provide additional functions and features |
| Hub Options | In this document, four distinct hub options are highlighted: <ol style="list-style-type: none"> 1. A Vendor Procured (licensed) hub: solutions licensed from a vendor 2. A SaaS hub: solutions using a vendor's software as a service |

| Term | Definition |
|---|---|
| | <ol style="list-style-type: none"> 3. A Proprietary Build hub: solutions built as a proprietary hub 4. A Mojaloop hub: solutions leveraging the Mojaloop OSS |
| Implementation Costs | Costs to install the hub, including hub testing and integration |
| Inclusive, Instant Payment System (IIPS) | Inclusive instant payment systems (IIPS) process retail transactions digitally in near real-time and are available for use 24 hours a day, 365 days a year, or as close to that as possible. They enable low-value, low-cost push transactions that are irrevocable and based on open-loop and multilateral interoperability arrangements. Licensed payment providers have fair access to the system, and participants have equal input opportunities into the system. The central bank has a role in system governance. End-users have access to a full range of use cases and channels, as well as transparent and fit-for-purpose recourse mechanisms (AfricaNenda 2023) |
| Instant Payment System (IPS) | Retail payment systems that are multilateral—and open loop—and that enable digital push payments in near real time for use 24 hours a day, 365 days a year, or as close to that as possible (AfricaNenda 2023) |
| Mojaloop Open-Source Software (OSS) | Software that can be used by organizations to build interoperable, digital payment systems that enable seamless, affordable financial services between individual users, banks, government entities, merchants, mobile network operators, providers, and technology companies – connecting the underserved with the emerging digital economy |
| Operations and Maintenance Costs | On-going costs required to maintain the hub once it is live |
| Procurement Costs | Costs to procure the hub |
| Proprietary Build Hub | Hub solutions built as a proprietary hub |
| Software-as-a-Service (SaaS) | A modern software distribution model characterized by subscription-based licensing. In this model, instead of buying and installing software on individual computers or servers, users access software applications hosted by a third-party provider through cloud-based apps. Users can typically access the software from any device with an internet connection |
| Vendor Procured Hub | Hub solutions from a vendor, which can either be licensed or used as Software-as-a-Service (SaaS) |

Use Case Definitions

| Use Case | Definition: The purpose of the Payment. At the most basic level, Use Cases are described by the type of End User acting as the Payer and Payee | Examples |
|------------|--|---|
| P2P | Person-to-Person: a payment made by individuals to friends, family members, or other individuals | Gifts, reimbursements for shared expenses, remittances |
| P2B | Person-to-Business: a payment made by an individual to a business | Retail store transactions, e-commerce, groceries, haircuts |
| P2G | Person-to-Government: a payment made from an individual to a public sector entity (government) | Tax payments, fee payments |
| B2P | Business-to-Person: a payment made from a business to an individual | Payroll, disbursements |
| G2P | Government-to-Person: a payment made from a public sector entity (government) and received by an individual | Tax refunds, social security payments |
| B2B | Business-to-Business: a payment made from one business to another business | Payments to manufacturers, suppliers |
| G2B | Government-to-Business: a payment made from a public sector entity (government) and received by a business | Small business assistance, vendor payments for government contracts |
| B2G | Business-to-Government: a payment made from a business and received by a public sector entity (government) | Sales tax payments, fines, and fees |