ModiHost

ModiHost: Whitepaper

Ver. 1.6 | December 2021

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1. Executive Summary

Hotel management is a complex and convoluted industry. It is also a highly inefficient one. The need to operate multiple systems, integrate different booking systems, and process reservations via mediums ranging from email to fax, have made hotel management hopelessly complicated. Each new system that is added into the mix introduces more complexity and requires more staff training.

New technology has impacted certain aspects of hotel management systems (HMS), while leaving others virtually untouched. As a result, hoteliers are forced to juggle an array of legacy systems alongside modern HMS. Hotel management systems control every aspect of an establishment's operations, from the initial booking through to room service and upsales. As such, the efficiency of the HMS is directly correlated with RevPAR (revenue per available room).

A HMS that could seamlessly integrate all hotel operations, while automating most guest and staff interactions would significantly reduce administrative expenditure and strip away layers of complexity. A solution that could do so while increasing guest satisfaction and hotel upsales, thereby increasing RevPAR, would transform the industry, but the costs and technical barriers to developing one are considerable.

ModiHost is a tech company that operates within the hospitality sector. Acutely aware of the problems facing the industry, and of the need for a comprehensive solution that removes pain points, we have devoted significant resources to developing a next generation HMS capable of transforming the hotel trade. Our solution is to combine AI with automated smart contracts to create a transparent and highly efficient system for guest management. Machine learning will drive accurate guest targeting, significantly increasing upsales and RevPAR.

ModiHost's cloud-based hotel management platform integrates cognitive computing and native voice recognition to deliver advanced services to hotels and their guests. While most HMS products are subscription-based, the ModiHost platform will operate on a flexible pay-per-access model meaning that hotels only ever pay for services rendered.

Using Big Data analysis, ModiHost will derive insights that can be used to boost efficiencies, reduce costs and increase revenue. Through the integration of blockchain, the ModiHost platform will allow all revenue streams to be monitored and billed in real time while creating a tradable marketplace for anonymized hotel data.

The AIM token will be used to provide payment for services acquired through the ModiHost HMS, while giving token pool operators an incentive to lend tokens to hotels. Businesses will be able to earn a discount on fees due to ModiHost by using the platform while staking AIM tokens. Through a token generation event, ModiHost will create a distributed community of pool operators, who will provide work on the network, enabling the efficient provision of tokens to cover operational fees.

Funds from the token sale will be used to perfect the ModiHost HMS, with the goal of creating an advanced AI that can maximize hotel revenue, boost occupancy rates and increase guest satisfaction. It will drive greater efficiencies for hospitality providers, ranging from small motels and boutique hotels to larger chains. This will enable them to compete with the leading hotel giants as well as sharing economy services such as Airbnb.

The archaic hotel management system has long been in need of an overhaul. ModiHost's HMS will bring the industry into the 21st century, through an intelligent solution that works for the benefit of all participants.

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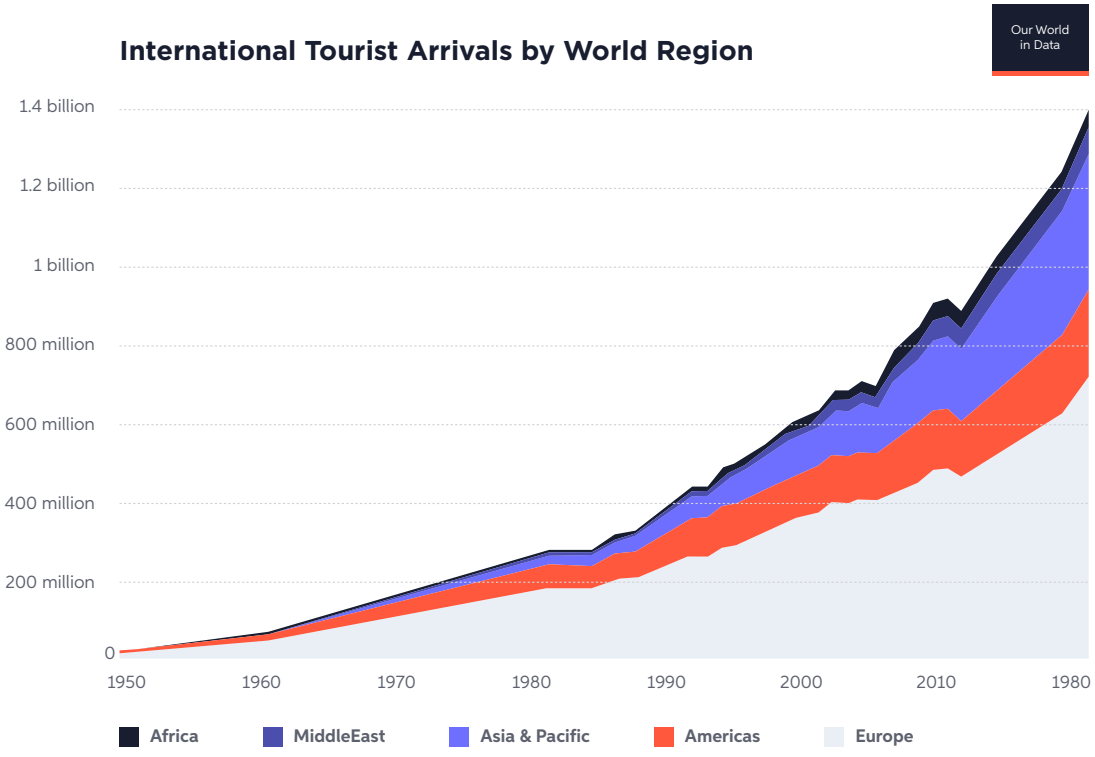
Hospitality Industry

2. Hospitality Industry

2.1 Market overview

2.1.1 Where we've come from

The popularity of international tourism has been increasing exponentially since the 1950s.[1] Faster, quicker, and cheaper air travel, as well as better living standards and greater workforce holiday provisions, have contributed to a holiday market boom which has shown no signs of slowing over the last decade.

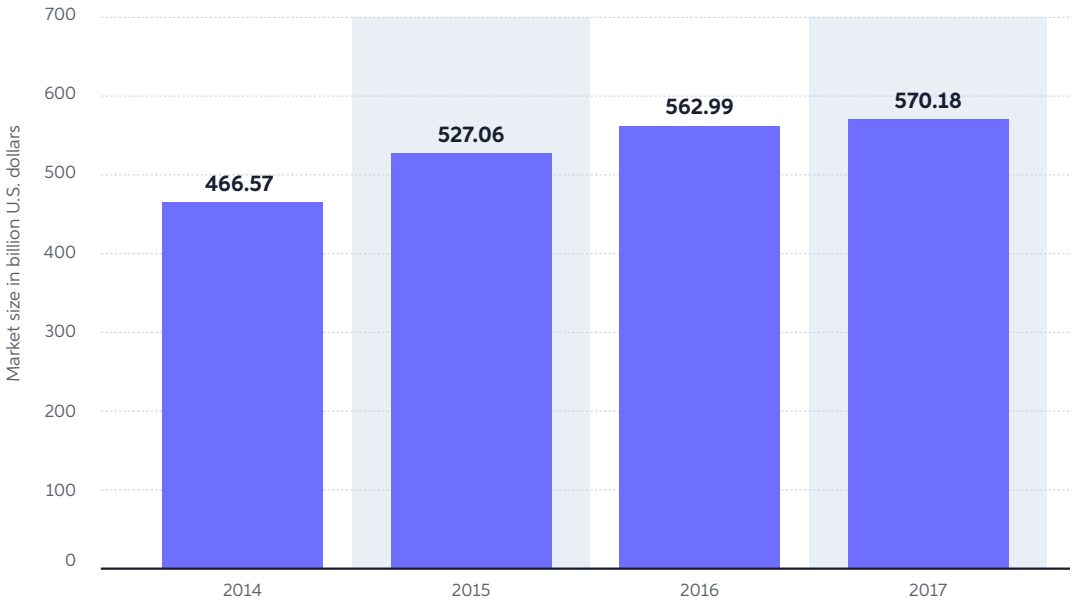


Source: United Nations World Tourism Organization-World Tourism Barometer (2019)

[1] https://www2.unwto.org/press-release/2019-01-21/international-tourist-arrivals-reach-14-billion-two-years-ahead-forecasts

This is evidenced by the fact that in 2008, there were approximately 917 million international tourist arrivals, but by 2018, this number had grown to 1.4 billion, a 67% increase.[2]

With air travel now within the means of an increasing tranche of the population, the number of travelers staying in hotels has risen in lockstep. From 2009 to 2017, US hotel gross bookings rose from $116 billion to $185 billion.[3] Over the last decade, the number of operating hotels increased by over 14,000, accompanied by a 17.7% rise in the number of hotel rooms. In 2017, travelers generated $2.4 trillion in economic output in the US alone.[4] The overall picture is one of a market in rude health.



Market size of the global hotel industry from 2014 to 2017 ($U.S. billions)[5]

[2] https://ourworldindata.org/tourism

[3] https://www2.deloitte.com/us/en/pages/consumer-business/articles/travel-hospitality-industry-outlook.html

[4] US Travel Association Report, 2017

[5] https://www.statista.com/statistics/247264/total-revenue-of-the-global-hotel-industry/

2.1.2 Where we're going

The market trend of steady growth is expected to be maintained over the coming decade as greater numbers of people are able to afford international vacations and short breaks, coupled with a rise in business travel. This can be seen in the projected earnings of the hotel industry over the next decade. In 2018 the global hotel market stood at $147.57 billion, but is projected to reach $211.54 billion by 2026.[6] A direct measure of tourist numbers shows that the sector is expected to grow substantially over the same period, with international tourist arrivals projected to reach 1.8 billion by 2030.[7]

2.1.3 Key trends

As the hospitality industry has grown, it has birthed several technological trends that are set to shape its future.

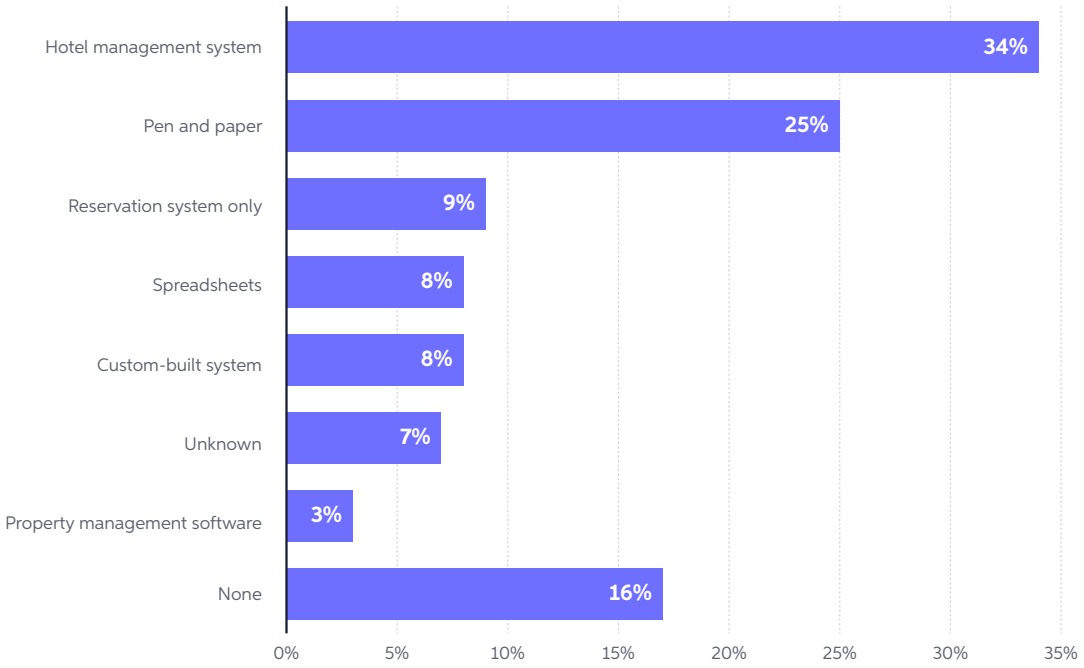
2.1.3.1 HMS and AI

A Hotel Management System (HMS) is a software platform that enables hotels to manage a variety of operations. It can also provide analyses of those operations, especially when actionable data is collected. In this way, HMS become more valuable over time as larger quantities of data can be studied to derive deeper and more valuable insights. Its functions include room booking, and arranging check-ins and check-outs with accounting functions included. Data collection may be focused on the hotel, the guests, or on staff performance, placing high-level investigative tools in the hands of hotel management. Despite the numerous benefits this software can provide, both in delivering a better consumer experience, and in boosting profitability, only around a third of hotels currently use an HMS to manage their operations.[8]

[6] https://www.zionmarketresearch.com/report/hotels-market

[7] https://www2.unwto.org/press-release/2019-01-21/international-tourist-arrivals-reach-14-billion-two-years-ahead-forecasts

[8] https://www.altexsoft.com/blog/travel/hotel-property-management-systems-products-and-features/



Current methods of hotel mahagement.[9]

Artificial Intelligence (AI) and Machine Learning, which is a subset of AI, are beginning to be implemented into hotels for the purpose of learning the preferences of guests and predicting their needs. Useful, actionable data includes guest preferences for room environmental controls such as temperature and lighting, proclivities for premium services such as spa facilities, and interest in local events. All of this information can be captured, stored and utilized so that a guest's future experiences are perfectly tailored to their unique tastes and needs.

AI can also being used to boost efficiencies in hotel management and reduce costs via smart property management. This strategy was adopted successfully at the Whaler in Maui, which used AI to manage energy usage and cut costs by 30%.[10]

Despite its capabilities, AI is rarely used to its full potential to improve services and increase profitability since the data collected by each hotel is kept private or shared only with sister hotels. The result is a siloed data system, where useful information and insights are effectively left unutilized. It is rare for

[9] https://www.softwareadvice.com/hotel-management/buyerview/report-2015/

[10] https://www.hospitalitynet.org/news/4077038.html

a single hotel to capture enough data on any individual guest to gain valuable insights as to their preferences. In most cases, collected data on a particular customer is a pointless exercise, with their preferences stored for little to no value unless the guest revisits the hotel. Data collection is, therefore, an exercise in time, effort and expense, with little tangible benefit for either party.

The lack of sufficient data on which to train AI-based HMS and to derive useful insights from processing it are not the only reason why adoption of AI-based HMS has lagged:

- Hoteliers cannot realistically create bespoke AI-based HMS systems that fit their specific needs. Doing so would require specialist development, with exorbitant budgets beyond the means of most independent hotels and small chains. For this reason, the bulk of hotels rely on HMS packages created by third parties.

- The HMS currently on the market are either basic and unreliable free-licence systems, or expensive subscription systems that are still of relatively low quality.

- Few HMS are applicable to the full range of hospitality venues. Though there is a range of solutions for hospitality venues including franchises, hotel chains, large hotels and resorts, small property owners, and property managers, these products are neither flexible nor scalable enough to be applied across the board.

- Many HMS are incompatible with wider technological advances such as blockchain, AI, IoT and robotics, and because of this have no scope to evolve beyond providing the most basic functions.

- Most HMS are designed solely to solve the problems of hoteliers and do not solve the problems of guests. This is a short-sighted approach since the issues hotel guests experience have knock-on consequences for hoteliers. As such, solving issues at the guest level is often significantly faster, cheaper and less burdensome than solving them at the hotelier level.

- Few HMS facilitate data sharing and data integration, meaning key business information is siloed. The result is that business opportunities based on actionable customer behaviors is lost.

2.1.3.2 Mobile apps

As in many sectors, smartphone apps have taken a central role in the evolution of the hospitality industry, becoming ever more ubiquitous over time. Some apps are simply used for booking into hotels, while others enable time-saving measures including automated check-ins, and can also act as digital room keys. In the most advanced apps, it is possible to alter room conditions such as lighting, thermostat controls, the television and room alarms. Hotel apps can also be used to order room service and access other premium hotel services.

Since mobile apps allow guests to perform various tasks for themselves, they simultaneously provide a sense of convenience while offering speedier service, and free up hotel staff to perform other duties. It is abundantly evident that the use of mobile apps has had significant impact on the profitability of a number of hotels. For instance, in 2017, $1.7 billion of Marriott's $13.3 billion gross bookings were generated from mobile apps.[11]

2.1.3.3 Automation

The evolution of AI and mobile usage have contributed to a more general trend, namely the automation of hotel services for guests and staff. Automation can be used to boost hotel efficiencies, reduce costs, and improve guest experiences. A highly automated hotel also has other benefits, freeing staff from performing highly repetitive and menial tasks, improving staff retention rates and satisfaction.

As a result of the reduced workload, hotels can choose to:

1. Cut costs by reducing the total number of employees

2. Retain staff to provide more meaningful and profitable guest experiences

It is estimated that by the early 2030s, 25% of the current jobs within the hospitality sector will be automated.[12]

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[11] Boulton, Clint. "How Design Thinking Drives Marriott's Digital Strategy." Cio, 2017, Advanced Technologies & Aerospace Database; Business Premium Collection, http://search.proquest.com.ezp-prod1.hul.harvard.edu/docview/1886205532?accountid=11311

[12] https://www.pwc.co.uk/economic-services/assets/international-impact-of-automation-feb-2018.pdf

2.1.3.4 Personalization

Hotel guests want the freedom and flexibility to personalize their stay. This includes services such as room selection, room environment management, and the option to purchase premium services and products.

Research shows that 36% of U.S. tourists would be willing to pay additional money for a unique experience.[13] Increasingly, consumers desire contact that is tailored specifically to their needs and wants. 57% of U.S. tourists research brands using their data to help personalize their experience.[14]

2.1.3.5 NFT

Non-fungible Token (NFT) are unique tokens that are able to hold an asset in them, such as copyrights, contracts, title deeds, art pieces, etc. NFTs grant ownership of specific underlying assets to their holders. With NFTs, value can be created and transferred from one person to the other due to their liquidity and ease of transfer through the blockchain.

With the inception of NFTs, art specifically has become more accessible to everyone. This gave a voice to upcoming and struggling artists with extraordinary talent but few outlets to showcase their work. Hotels can play a key role in giving the artists a space to showcase their work and connect with potential buyers.

2.2 Market challenges

As the hotel industry grows and the nature of hospitality evolves, hoteliers are faced with an array of problems. This includes increased competition not only from other hotels, but from hosting applications such as Airbnb. In this climate

[13] https://insights.ehotelier.com/insights/2019/04/10/hotel-profits-from-ai-to-z-how-artificial-intelligence-will-improve-your-ratios/

[14] https://insights.ehotelier.com/insights/2019/04/10/hotel-profits-from-ai-to-z-how-artificial-intelligence-will-improve-your-ratios/

of increased competition, hoteliers must work to reduce costs, increase profits, and boost efficiencies wherever possible. At the same time, they must attempt to maintain standards and competitive prices while providing a quality of experience exceeding that of their competitors.

2.2.1 The cost of luxury

To provide a quality of experience for guests which far exceeds that offered by any competitor, many hotels attempt to improve the luxury of the hotel and the services provided to guests. However, increased luxury does not always lead to increased demand which justifies increased room prices and thus greater profits. In many cases, the increase in profits gained through this strategy is far less than anticipated.

A major component of the perception of luxury is redundancy. From the taxi outside that is already waiting to more pillows than the guest could ever sleep on, more food and drink on offer than is possible to sample, staff always on hand and waiting to fulfil their every need, luxury means having absolutely everything in excess and at their convenience.

Though wealthy guests are willing to pay a premium for such luxury, there is also a great cost for hotels providing this level of experience. Excess is, by definition, inefficient. As a result, despite high gross revenue, a luxury hotel's total expenses may be such that its net income is not significantly greater than that of a mid-range hotel.

2.2.2 Staffing

The need to manage a large number of staff remains one of the major pain points for hotels looking to reduce costs and increase efficiency.

Salary

Running a hotel requires a range of specialist staff members including managers, desk clerks, porters, chefs and catering, maintenance staff and cleaners. Some employees are also required to work overnight, which further increases wages.

Humans are inefficient

Even the best staff are not optimally efficient.[15] There is always a lag in the decision making and service delivery process, with collaboration between multiple staff members taking time to disseminate information and effectively allocate tasks. Further to this, even the most dedicated of staff members can only work so long before requiring a break. Tiredness in the workplace can directly impact job performance, with service levels being impaired.

To create a functioning human workforce in the first place, hotels must spend time and money to train new staff. New staff typically require a significant period of time to learn the intricacies of their new roles. During this time they create almost no value for the hotel but often do take a wage. Existing hotel staff are sometimes allocated as mentors for the new staff to speed up the learning process. This, however, detracts from the performance of the mentor since their focus and time is taken away from performing essential and productive hotel functions. It may take several months beyond this initial training for the staff member to become truly proficient in their role.

The costs incurred by hotels for staff training can also negatively impact guests and the financial burden associated with staff training can make a major dent in a hotel's bottom line. This often translates to higher room rates for guests. Until proficient in their roles, new staff are prone to making mistakes and delivering services slowly. Time spent by mentors training staff may also impact upon the service being delivered to guests.

After all of this expense, the annualized employee turnover rate in the hotel and motel industry is 73.8%.[16] This means that all of the time, effort and money expended on training new staff will likely yield little long-term value for the hotel. The next year, the same massive costs will be incurred on training the next round of new staff members.

[15] Chin-wei Huang, "Assessment of efficiency of manual and non-manual human resources for tourist hotel industry" in International Journal of Contemporary Hospitality Management, vol. 29, no. 4, pp. 1074-1095 (2017): https://doi.org/10.1108/IJCHM-07-2015-0363

[16] https://business.dailypay.com/blog/staff-turnover-rates-hotel-motel-hospitality-industry

Human error

No one is immune to human error, but in the hospitality industry, simple mistakes can have costly repercussions. Forgetting important details, misinterpreting the needs of guests, mixing up requests and/or simple clumsiness can all have a massive impact on the reputation and thus profitability of a business in the longer term. The accumulation of small inconveniences to guests can have a serious impact on a hotel's reputation, its cost-efficiency, and its bottom line.

2.2.3 Difficulty of upsales

In the hospitality industry, it is difficult to determine exactly which products or services should be offered to guests in order to successfully add value and increase profitability. There is such a wide range of potential upsales that can be offered to guests including food and drinks, spa experiences, in-room entertainment and room upgrades, that to offer them all would merely serve to baffle and confuse the guest rather than assist them and improve their stay.

Without a data-driven approach, staff can only employ blunt-force methodology to drive upsales, advertising all possible options to every guest indiscriminately upon check-in and at various points throughout their stay. Pitching the wrong products and services can lead to guests switching off, or avoiding contact due to "sales pressure". This presents as a huge missed opportunity, for while some guests exclusively use complementary services, up to 59% of hotel guests are interested in upgrades and additional services.[17] Equally, this can be stressful for the hotel workforce who may feel pressured by the hotel to make upsales.

[17] https://www.forbes.com/sites/chuckcohn/2015/05/15/a-beginners-guide-to-upselling-and-cross-selling/#4500ff8a2912

2.2.4 Demand cycles

Many hotels struggle with yearly periods of low demand, a fact which is especially true for resort hotels. Summer resorts lose guests in the winter months while alpine resorts that rely on snow-sports enthusiasts can be left completely empty in the summer, or during mid-winter when the snowfall is so great that the resort becomes inaccessible.

These resorts have to suffer through their respective off-seasons on a yearly basis. During the off-season, hotels have little to no revenue coming in yet remain bound to a number of expenses. These include hotel upkeep (including staffing and environmental controls), and the fixed costs of the HMS.

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ModiHost's Solution

3. ModiHost's Solution

ModiHost is a next generation cloud-based hotel management platform that integrates AI, Machine Learning, Cognitive Computing and Native Voice Recognition. It enables hotels to deliver a range of advanced, tailored services to their guests. Moreover, ModiHost furnishes hoteliers with a greater degree of precision and control over their business operations than ever previously possible.

ModiHost will also operate with a fairer and more transparent fee system than any HMS currently on the market. While most HMS products charge fixed rates, the ModiHost platform operates on a flexible Pay-Per-Use model wherein hotels only pay fees on delivered services. In effect, ModiHost will pay for itself as it delivers value to management.

The AI-driven solution will create a smarter system, more responsive to the needs of guests, more intuitive for staff, and more profitable for hotel owners, while resolving a range of issues experienced by all players in the hospitality ecosystem.

3.1 ModiHost HMS components

The ModiHost HMS is designed to facilitate interactions between the different components of the ModiHost platform and is operable on any system or browser. Easily integrated with the majority of online travel and booking agencies, ModiHost seamlessly combines the booking and reservations side of the business with guest and hotel management, working with a broad range of hotel and accommodation facilities. The ModiHost HMS provides access to the ModiHost platform using open source applications and a web application.

3.1.1 AI

ModiHost is working with a professional development team that will deliver all AI-related features. The HMS will use big data modeling to convert the vast

amounts of data created by the hospitality industry into actionable insights which can be implemented via AI. The specially developed ModiHost AI will use past data to predict the wants and needs of hotel guests in order to optimize upsales.

Beyond simply re-offering additional services that guests have previously purchased, hotels can use ModiHost's AI to offer enticing discounts on those services at keys times, offer special packages, and sweeten the deal with just the right amount of complementary services. To make this a reality, the ModiHost HMS uses cognitive computing algorithms for conditional decision-making.

For instance, where a guest elects to share their travel information, ModiHost's AI will offer to assist in arranging transport to/from the airport or station. The system will automatically book a vetted taxi service that offers the best price and is available at the time of travel. ModiHost will continuously monitor the guest's travel information to ensure that any necessary changes in travel arrangements are made automatically.

Where a guest orders an in-room movie, the ModiHost HMS will offer food and drink options in line with their recorded dining preferences. Information can be drawn from the guest's in-hotel dining, dining records at other hotels within the ecosystem, restaurant booking preferences and any information that the guest elects to provide ModiHost. For this reason it is expected that implementation of AI will significantly raise upsales.

ModiHost also provides live dynamic price adjustments for online bookings. The system will monitor the price-per-room of similar hotels in the local area and ensure that rooms at the hotel in question are consistently priced competitively. The cost of each room will be made to correlate with scarcity. Where most rooms in the local area are booked, the system will automatically increase the cost of booking. Where bookings are down, the system will begin pricing rooms at discounted rates to encourage bookings. Automation will also prevent overbookings and double bookings, thus averting costly mistakes.

AI will also be utilized to automate the staff training process. This will ensure that every new hire gets the necessary training they need in accordance with their strengths and weaknesses while negating the need for existing staff to act as mentors. As well as being more efficient, this method of training will be delivered at a fraction of the cost of traditional staff training methods.

Implementing AI is incredibly cost-effective since it simultaneously increases revenues through contextualized upselling, eliminates the need for human staff to spend time trying to upsell, thus allowing staff to be allocated to performing core hotel functions, and continuously increases efficiencies across the board since the technology has the facility to automatically improve its own performance over time without any need for human intervention.

Though ModiHost will apply a variety of machine learning algorithms including Recurrent Neural Networks (RNNs)[18] and Long Short Term Memory networks (LSTMs)[19] as are most suitable to the various features of ModiHost, the core machine learning techniques utilized will be based upon the reinforcement learning framework.[20] This framework has been variously applied in the field of AI and has yielded unprecedented results in the performance of a variety of tasks.

The reinforcement learning framework provides ModiHost's AI algorithms with self-improving capabilities, enabling them to automatically amend themselves based on user feedback and reality checks. As such, ModiHost's AI will improve exponentially as the number of users on the platform increases.

3.1.1.1 Self-correcting algorithm optimization

ModiHost's AI improves its performance over time through a trial-and-error based predictive model. The software uses data collected to make predictions on a variety of metrics such as a hotel's monthly revenue, number of guests, or upscale rate. Where the prediction aligns with the outcome, it is assumed that the algorithm is optimized and no amendment need be made.

Where there is some disparity between the prediction and outcome, it is assumed that the algorithm is not properly optimized and must be altered. To this end, an evaluative process is triggered in which a granular analysis of the factors that informed the creation of the initial algorithm and the factors that actually occurred that informed the unanticipated outcome is undertaken. The algorithm is then amended based on these analyses and the insights derived. Further predictions will be made for the following month and the process repeated until the predictions made align with reality.

[18] https://www.nature.com/articles/s41598-018-24271-9

[19] https://machinelearningmastery.com/how-to-develop-lstm-models-for-time-series-forecasting/

[20] https://www.nature.com/articles/nature14236[https://www.nature.com/articles/nature14236; https://www.nature.com/articles/s41593-018-0147-8

3.1.1.2 User engagement-based algorithm optimization.

Facebook uses a variation on the reinforcement learning framework to optimize its notifications.[21] Similarly, ModiHost will optimize the performance of its AI across the board by evaluating the performance of each algorithm in terms of user engagement.

For example:

- ModiHost's recommender system sends a guest a recommendation for a particular movie at 8pm.
- The AI monitors whether or not the guest reads the recommendation.
- If the recommendation is read, the time of reading is recorded.
- This information is used to optimize the timing of future notifications for guests with similar interests.
- Where the guest watches the recommended movie, it is assumed that the algorithm is optimized and no action need be taken.
- Where the guest does not watch the recommended movie, the amendment of the algorithm is triggered.
- The AI re-evaluates the factors that informed that particular recommendation, analyzes any data captured on what the guest chose to do instead of watching the recommended movie, cross references this with information on the guest and any relevant contextual factors (e.g there was a large event on in the city that the guest chose to attend instead of staying at the hotel) and alters its recommendation process accordingly.

[21] https://arxiv.org/pdf/1811.00260.pdf

3.1.1.3 Guest profiling

ModiHost will also apply a variety of machine learning algorithms to profile hotels and guests in order to accurately match guests with relevant hotels according to the guest's budget, tastes and preferences.

For example:

- A guest frequently uses ModiHost hotels across the US.
- The guest travels to Los Angeles, a location where that traveler has never stayed before.
- ModiHost's AI will analyze that guest's prior stays to find hotels in the Los Angeles area that closely resemble the hotels that the guest has previously booked in other cities.
- Should the guest have previously taken excursions while staying at hotels to go surfing, the AI will take this into account and may include some hotels in, for instance, the Huntington Beach area that match the guest's preferences and budget.
- Where the guest tends to stay in high-end, luxury hotels, the system may include stays in Beverly Hills or suites in central Los Angeles.

3.1.1.4 Generalization vs personalization

Many customer-facing business enterprises generate and collect vast amounts of data. A credit card provider collects data related to transactions including where the transaction happened, who made it, the amount spent, and for what. Telecom providers collect data related to phone calls made and received. An airline collects data on who traveled where, how much they spent on it, and a variety of information related to the journey itself. An online travel agency collects data related to bookings for hotels, airlines, vacation packages and so on. A hotel chain collects data about who stayed where, when, how much they spent and on what.

Unfortunately, most of this data is under-utilized and its full value is never realized. However, creative data processors are now beginning to find new ways to analyze this data and extract insights that will improve the end-customer experience while also providing value for data analysis as an industry. All of this can be done in a non-intrusive manner with the privacy of the individual whose data is gathered, preserved and protected.

A HMS (Hotel Management System) collects data related to the customer, their bookings and stays. There are two ways to monetize data that an HMS gathers: by generalization and personalization. While generalization uses aggregation to provide insights by a category, classification or grouping, personalization is focused on the individual.

Generalization

Generalization involves anonymizing collected data by removing all personal identifiers and then harvesting insights from it. These insights can then be white labeled and sold as a service for further value addition and enrichment.

Data gathered about customers and their transactions can be collated and sorted by context. This data can then be filtered by a variety of characteristics including geography, age and sex. Next, the data is generalized and sanitized through the removal of all personal identifiers. Removal of all personal identification will satisfy the regulatory requirements of GDPR and other regulators, some of which are regionally specific.[22]

Seekers of insight as a service can retrieve very specific data in accordance with their objectives. Let us say, for example, that an insight seeker wants to improve the service that they provide to business travelers at their property at destination X. The particular property is frequently short staffed between September and October. The brand has received complaints and seen customer demand declining with their competition picking up the slack.

The insight seeker may query the generalized data for business traveler trends to destination X between the months of September to October. This query returns information that, per analysis of data collected over the past seven years, men between the ages of 40 and 55 form the majority of business

[22] https://eugdpr.org

travelers (55%) to travel destination X between the months of September and October. Women between the age of 35 to 50 come next at 25%, followed by men older than 55 at 15%. The majority of the travelers are English speaking (80%), followed by Spanish speaking (10%). Most are residents of the United States (75%), followed by Europeans (15%).

A common theme of the customer complaints recorded is that guests are often frustrated when they are not understood completely by the staff, and that problems they raised about the hotel and their stay were not immediately addressed.

In response to this information, destination X's brand managers conducted investigations and found that only one third of their staff at this destination X spoke good English. In response, they implemented an incentive system to encourage staff to become proficient in spoken English and made it mandatory for them to speak English when working except when entertaining Spanish-speaking guests. Additionally, they launched a promotional campaign that explicitly mentioned the improvements made in terms of English-speaking staff at destination X to stimulate bookings. They also announced a referral bonus.

As a result, destination X saw such a significant rise in business that the brand managers acquired another property at the location to cope with the increase in demand.

In the above example, no personal information related to any specific traveler was divulged, yet the aggregated data made available to the insight seeker provided valuable insights that helped them to resolve a pressing issue and significantly improve their business.

A good industry example of a generalized data provider is Truata, a joint partnership between Mastercard and IBM.[23]

Personalization

Taking the above example further from data monetization by generalization to personalization, individual customers can be targeted with personalized promotions based on the wants and characteristics of those specific guests.

[23] https://www.fintechfutures.com/2018/03/mastercard-and-ibm-join-forces-for-new-data-trust-truata/; https://www.finextra.com/pressarticle/73053/ibm-and-mastercard-combine-to-combat-gdpr-with-truata; https://www.truata.com/

This is only made possible by ModiHost's ability to capture a 360° view of the customer.

Should a guest frequently drink at the bar then extra drink vouchers would be an appropriate promotional lure for them. Where the guest often watches in-room movies, a film package may be offered that includes a discounted rental on a movie that matches their preferences along with in-room dining options. Equally, data collected on guests can be used to identify poor promotional lures. For instance, a guest that has always rejected high-calorie foods when tended should not be offered a box of cookies.

A case in point is the DoubleTree hotel chain,[24] which offers cookies to guests upon arrival as a promotional tool. DoubleTree offers no alternative. Guests may either take the cookie or leave it. There is no alternative for weight-conscious or diabetic guests.

One could, however, imagine a scenario in which a thoughtful employee who knows the customer well and is aware that the standard cookie offering is unsuitable in this instance, buys some organic fruit and offers this to the guest as an alternative arrival gift. This is a personalized offering. Once a hotel employee forms a full understanding of the wants and needs of a guest, they can create a bespoke and luxurious experience for the end-customer. ModiHost's HMS can be programmed to follow the actions of such thoughtful employees.

ModiHost's AI can excel beyond mere analytics to generate the "human connection" which is often a driving factor in the appeal of a hotel. ModiHost's HMS can learn from successful and highly appreciated employees and emulate their characteristics, virtues, empathy, consciousness, behavior and nature.

Once a set of data fields capable of capturing a 360° view of the customer has been established, the guest's profile may be further enriched with inputs from the guest's social media and browsing history, among other sources, to identify their tastes, preferences and biases.

Beyond creating a better hotel experience for guests, all of this captured and analyzed data can be leveraged as inputs for ModiHost's recommendation engine which identifies the best actions and offers to service each specific

[24] https://www.hilton.com/en/doubletree/

customer at any given time. Location data can further enhance the relevance of such offers for opted-in customers. The recommendation engine's NBA/NBO output on each guest must be as personal to them as their signature.

The hospitality industry must now look to extend the number of data fields captured on customer tastes and preferences and train staff on capturing that data.

3.1.2 Chatbots

ModiHost HMS will seamlessly integrate with chatbots and automated concierge services, with a readymade solution in the form of IBM's Watson Assistant.[25] This assistant has been selected due to its attributes as an enterprise-grade, cloud-based chatbot. The Watson Assistant "knows when to search for an answer from a knowledge base, when to ask for clarity, and when to direct [guests] to a human."[26]

When configured properly, chatbots are a powerful tool to drive upsales with little ongoing maintenance. Chatbots can be used to boost sales in a wide range of situations, from in-room dining and entertainment to third party products and services including tickets for local events and attractions. The use of chatbots will also contribute to greater efficiencies and reduced costs since these applications can quickly resolve guest issues, thus freeing hotel staff to focus on other tasks. Further, the Watson Assistant will be easily configured to meet the precise needs of each hotel.[27] ModiHost will incorporate the latest developments in Natural Language Processing techniques and will support a number of different languages for communication with guests and staff.

ModiHost's AI will utilize sentiment analysis techniques to assess the tone of guests when they communicate with hotel chatbots to glean insights as to their emotions. This information will be used to tailor the chatbot's tone and responses. If, for example, the chatbot assesses the guest's tone to be indicative of annoyance, the bot will adopt a calming and appeasing tone. Where a guest sounds tired, the bot will communicate at a reduced volume and in a mellow tone so as not to be grating.

[25] https://www.ibm.com › cloud › watson-assistant

[26] https://www.ibm.com/cloud/watson-assistant/

[27] https://www.ibm.com/uk-en/marketplace/watson-assistant

3.1.3 Robotics

Among the high-tech solutions offered and implemented by ModiHost will be support for robotics integration. There are already a number of third party robotic solutions on the market that promise to increase the efficiency of the hospitality industry and improve the hotel experience for staff and clients alike.[28] These robots can be used to perform tasks such as delivering food and amenities, as well as interact with guests. ModiHost is currently developing a software solution that will support the use of such robotic solutions via APIs.

3.1.4 IoT hardware

ModiHost will facilitate the control of IoT hardware components including climate controls, thermostats, door locks, smart TVs and smart speakers, which will be supported and made accessible via APIs.

This will allow the hotel to remotely manage room telemetry with precision and accuracy. When used in conjunction with data capture and analysis that ModiHost incorporates, the hotel will be able to automatically adjust room telemetry according to individual habits, vastly improving guest comfort and satisfaction.

3.1.5 Utilizing NFT at Modihost

NFT Integration

Modihost will integrate an NFT system through the HMS, allowing hotels to offer an additional experience to guests. Hotels will be able to showcase unique NFT artwork to their guests, either through the guests entertainment system or throughout the hotel, giving guests the opportunity to purchase the art pieces.

Guests will also be able to participate in secondary market trading of these NFTs through the integrated NFT marketplace within the Modihost ecosystem. Additionally, guests will have the option to redeem the NFT of the digital art for the physical art if it is available within the hotel.

[28] https://www.savioke.com; http://techmetics-group.com

Modihost will receive royalties on all of the purchases and trades of NFT artwork at a percentage rate of 3% royalty from each transaction; these fees will be used to continuously develop and improve the platform.

3.2 Guest experience

ModiHost enables the creation of an experience tailored to each guest's stay. The HMS facilitates this through a combination of active interactions with guests and through predictive technologies that are used to anticipate guest needs.

3.2.1 Guest interactions

Interactions with the ModiHost HMS will not be limited to staff and management. It will also be possible for guests to interact with the HMS through various interfaces. Through ModiHost's native voice processing software, guests will be able to order services as if they were talking directly with another human. As an example, a guest may verbally request "the same meal that I had yesterday but change the tea to coffee". The HMS voice ordering algorithms can understand this conversational form of request and will signal the preparation and dispatch of this order accordingly.

ModiHost's interfaces will allow guests to better manage their stay, providing direct control of room and environmental settings and facilitating contact with staff when required. Guests will also be able to book premium services within the hotel, order room service, book tickets to local events, book transportation, check-in and out and perform other actions via mobile chatbot apps, via native voice recognition hardware, or via a range of smart hardware devices that the hotel may have integrated.

Allowing guests to interact with the HMS in their own language is vitally important. It improves the quality of their stay and allows them to freely order services in comfort. The language barrier is one of the biggest impediments to upsales in the hospitality market today,[29] as many international guests are reluctant to interact with hotel staff due to their poor grasp of the native language. They may be embarrassed of their non-fluency or simply find the act of attempting to order difficult and frustrating. ModiHost's native

[29] https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1175&context=gradconf_hospitality; https://journals.open.tudelft.nl/index.php/sure/article/download/2823/3019/; https://pdfs.semanticscholar.org/ab4c/9b89ae2a5d58673fd364c03293e92b64a1e1.pdf

voice processing software currently supports fourteen separate languages. Since guests can interact in their native tongue, they are likely to feel more comfortable and there is far greater scope for upsales.

In addition, ModiHost greatly streamlines guest accessibility using advanced technological solutions. For example:

- Facial recognition is used to massively speed up the check-in process.
- With keyless room access, guests do not have to carry around an access card wherever they go and search in their bags to find it when they return to the hotel after a long day of adventuring.
- Native voice recognition allows guests to order and pay for premium services without having to input credit card details, while preventing others from purchasing without their consent.[30]

3.2.2 Predictive hospitality

When a guest first books a stay at a ModiHost-enabled hotel, a client profile is created for them. From the point of check-in, data is collected on their preferences as they interact with the platform, with their client profile updated after each interaction.

The data collected will inform guest characteristics, behaviors and preferences. The type of data collected may include the time at which they check in and check out, the times that they set their morning alarm, the times they leave the hotel, the times that they return, their food and drink orders, what premium services they purchase, the temperature of their room, their movie/TV preferences, the type of local events and locations that they purchase tickets for, who they travel with, whether they tend to go out or stay in under certain weather conditions, and the types of transport they prefer among many other data points.

ModiHost processes this data using Big Data techniques to derive valuable insights that will improve current and future hotel visits while reducing costs and substantially increasing upsales.

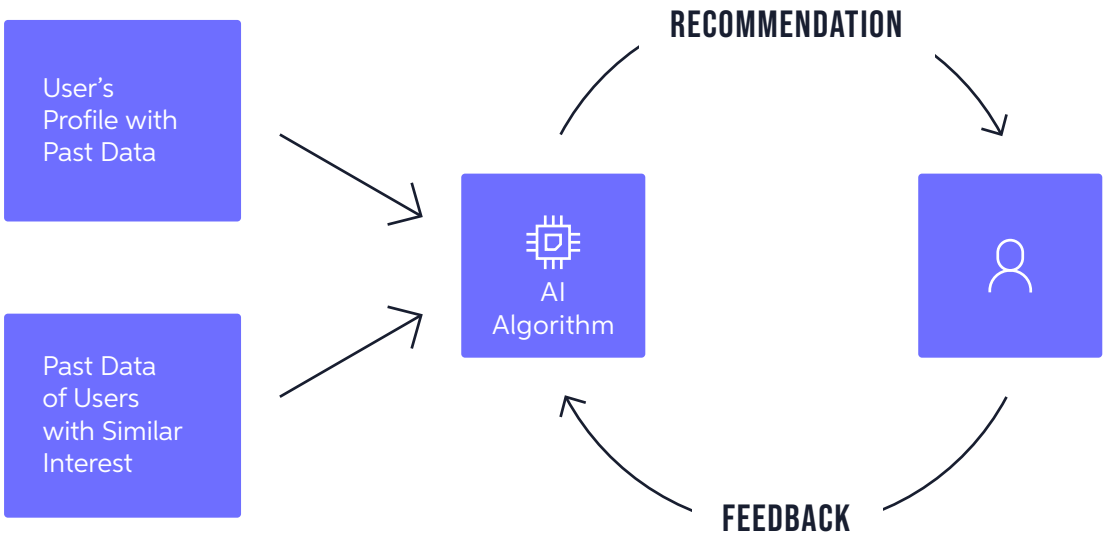
[30] ModiHost will continuously add voice recognition support for a variety of languages as the platform grows. This will allow users from across the world to seamlessly communicate with ModiHost in their native languages.

For example, should a guest's flight be scheduled a significant time after check-out, the HMS could offer a discount on secure baggage holding at the hotel. The system could also recommend and arrange tickets and transport to experiences in the local area that can safely be enjoyed within a timeframe that will get the guest to the airport in sufficient time. ModiHost will track the guest's movements and, when the guest departs from their location to the airport, their baggage will be transported to meet them there.

By collecting data on the average time between the guest's alarm setting and the time that they leave the hotel, ModiHost can ensure that transport is waiting for them at the door when they need it.

This profile metadata can be shared and used for upcoming stays at participating hotels which will then be able to offer guests the same level of highly personalized service.

ModiHost's AI algorithms will analyze each guest's past data to inform contextualized recommendations. The recommendations produced by these algorithms will automatically self-improve over time in light of use reactions to recommendations made (see figure below).



All data collected on guests will be collectively profiled and visualized in a manner that renders key insights derived easily digestible for hotel managers. This will enable hotels to understand their users better, make informed decisions and tailor their services accordingly.

3.2.3 Use of NFT by hotel's guests

Modihost will leverage NFT technology to give guests a unique experience. ModiHost will offer guests the ability to purchase NFT artwork via an NFT system integrated into the HMS, with NFT artwork accessible via the entertainment system in guest rooms. Guests will be able to browse and purchase NFT artwork from the comfort of their room. This mechanism enables a unique link between the whole ecosystem of hotels, guests, artists, and NFTs.

Guests will be able to purchase NFTs using Modihost's native token (AIM tokens), or other crypto or fiat currencies.

Hotels will offer guests curated NFT artwork that can only be purchased through the hotel NFT marketplace hosted by Modihost. This can incentivize the guests to purchase these NFTs during their stay. Scarcity is key in NFTs and guests will be able to participate in purchasing scarce and rare NFTs directly from their rooms, that are otherwise unavailable anywhere else in the world. NFTs are easy to transfer, making the purchase process smooth and simple. On top of this, NFT can be traded and provide a vehicle for future development of the concept — e.g. building a NFT based guest book or connecting to local attractions.

3.2.4 Use cases

Use Case 1

A guest is due to arrive at the hotel following a long-haul flight. ModiHost automatically checks the guest's arrival time and sends transport to seamlessly transfer the guest to the hotel. Shortly before the guest is due to arrive, staff members or a robotic porter will be mobilized to collect the guest's baggage and take it to their allocated room.

The check-in process integrates facial recognition software so that all the guest needs to do is look into a camera to check in. This bypasses the need for the exhausted guest to endure a drawn-out check-in procedure.

The guest will then be shown to their room. Prior to the guest's arrival, ModiHost's AI decision-making algorithms will have taken their long-haul flight into account and, under the assumption that the guest will wish to sleep immediately, given directions to staff to prepare the room for this purpose. Appropriate settings may include closed blinds and temperature pre-set via air-conditioning or heating so that these can be turned off by the time that the guest arrives.

Should the guest have stayed with a ModiHost-enabled hotel before, the data captured from these previous stays will be used to prepare the room according to the guest's preferred sleeping preferences. The room will contain a ready-prepared hamper of foods and drinks should the guest be hungry or thirsty. Again, should ModiHost have data on the guest collected from prior stays, the food and drink will be selected in accordance with their preferences.

The guest's room will automatically be allocated "do not disturb" status for the following day and the guest will also be able to quickly set an alarm through a chatbot app and get straight to sleep.

Use Case 2

A guest is in town attending a business trade show and has a few free days before and after the event. Using data from previous stays, ModiHost selects events and dining experiences that properly reflect the guest's tastes and preferences. ModiHost's AI decision-making algorithms will take into account that the guest will likely have an early start at the trade show and will, therefore, likely wish to go to bed before midnight. As such, the system will suggest events that finish early enough and will attach a note to events that finish later than this to make the guest aware.

Once the guest selects an event, ModiHost can offer and arrange transport both to and from the event at the appropriate times. The system can also offer pair complementary experiences and services such as dinner reservations at restaurants in the vicinity of the event location, upgraded tickets and backstage passes, and tours of local landmarks en route to the event location.

On the day of the trade show, an alarm is automatically set for the guest to ensure that they have ample time to prepare and have breakfast. A fresh packed lunch can also be offered for the guest to take with them.

Transport will be automatically arranged to ensure that they arrive at the location of the show in plenty of time. Transport back to the hotel will be automatically booked for the time that the event ends. Should the guest wish to return to the hotel before the show ends or to stay later, the transport time can be altered via the hotel's app in just a few clicks. For the evenings and days following the trade show, ModiHost will suggest other experiences and events for the guest without time restrictions and according to their preferences.

Use Case 3

A guest checks into the hotel and immediately starts seeing digital and physical artwork displayed on the walls of the hotel. Once in their room, the guest will be able to browse the library of artwork displayed around the hotel from their in-room entertainment system. The guest finds a piece they are interested in, and can read more about the history of the piece, about the artist, and view the listing price.

Via the entertainment system, the guest can then purchase the NFT, using Modihost's native AIM token, crypto or simply get it added to their bill. The guest will have the option to purchase the artwork as NFT digital art and keep as a collectible, or redeem it as physical art (if applicable for that piece).

After purchasing, the guest decides to keep the artwork displayed at the hotel to showcase to other guests. This will allow other guests to make offers and buy the piece from the first guest, opening up a virtual secondary market.

3.3 Hotel experience

ModiHost's HMS provides hoteliers with one of the most cost-effective ways of upgrading their existing hotel properties, and in a manner that can substantially boost sales. The high level of system self-reliance provides massive efficiencies over traditional hotel management. By automating many hotel operations that are currently performed by hotel staff, AI reduces the number of staff required while radically boosting productivity.

When properly implemented, ModiHost can be a powerful tool for increasing customer satisfaction. This results in higher upsales and positive feedback, which in turn drives demand, boosting revenue.

One important differentiating factor of ModiHost is that the software solutions encompassed by the HMS also eliminate the loss of communication problem which burdens existing SaaS solutions. ModiHost uses a secure local duplication of the hotel database that allows users to perform basic operations without an internet connection.

In the event of a lost connection, data concerning operations can be stored locally and synchronized with the online service when internet communication is reestablished. Thanks to this functionality, hotels and accommodation facilities continue to function normally even during unforeseen circumstances.

Example 1

A hotel at a luxury ski resort is struggling financially. The property is in good condition, in a great location close to an airport, has good transport links to and from the hotel and is near some of the top slopes for snow sports in the world. Despite this, the hotel barely breaks even after paying the costs of staffing the resort and the fixed costs of its HMS, which are still charged in the off season when the hotel has very few guests.

Though the resort has the facilities for a number of premium services such as hot tub, massages, and luxury food and drink, all of which guests would be happy to pay for, the staff struggle to upsell effectively.

The resort switches to ModiHost's HMS. ModiHost allows the resort to operate with far fewer staff by automating many processes, lowering wage pressure. The automation of key processes also results in faster service delivery. Using data insights, the resort is able to determine exactly which premium services to offer to its guests, increasing profitability.

This overall result is to improve the reputation of the resort leading to higher demand and justifying an increase in the price charged to guests per room. Moreover, since the ModiHost HMS uses a pay-per-use model, the resort is not burdened with excessive running costs during the off-peak season.

AI driven human resources management

Most hotels expend significant resources on human resources management, hiring and employee turnover. ModiHost's AI driven HR tools utilize the past performance and recruitment data of all hotel employees to provide insights and create optimization recommendations for human resources staff and managers. These tools can add significant value on a number of fronts:

- Identifying the most talented candidate for any role.
- Training new staff through digitized content.
- Reducing employee turnover by managing their progress, identifying areas of their performance that could be improved and recommending training content accordingly
- Predicting the resignation/leave date of an employee, so that management can prepare accordingly.

NFT marketplace

Modihosts HMS will automatically interlink to the ModiHost NFT marketplace enabling hotels to utilize a highly innovative solution to showcase digital artwork to their guests, allowing them to participate in the transactions of digital art through NFTs. This solution will position hotels as innovators in the hospitality space allowing further growth through attracting curiosity and new audiences.

This unique link between the Modihost HMS, guests, hotels, and artists creates an ecosystem that promotes growth and provides opportunities for everyone in the network.

Hotels will benefit from additional revenue streams, taking commission on artwork sold directly and via the secondary market. Hotels will also be able to charge fees on art being displayed within the hotel.

As well as this, hotels utilizing the Modihost ecosystem and therefore the NFT marketplace, will be an innovator in the hospitality space, and may also be able to benefit from additional PR and marketing.

3.4 Implementation

The installation, setup and administration of ModiHost is designed to be as simple and straightforward as possible, requiring no specialist computing knowledge or expertise. ModiHost will provide every client with clear and simple instructions for use, augmented with an easily navigable FAQ to assist in key tasks and operations. ModiHost will also offer round-the-clock support for its clients via a range of communication channels should any further assistance be required.

ModiHost is designed to form an intuitive system with specific focus on user-side simplicity. This means that minimal staff training will be required after the installation and setup process is complete. ModiHost will also have a training, or sandbox, mode in which staff members can experiment with the system without fear of breaking something or making an error.

There will also be a high-degree of customizability within the ModiHost architecture to give clients the freedom to alter the app to suit their particular needs. Should a client require full integration of their own branding into the software, this can be achieved through third party developers

The ModiHost HMS can be integrated with all standard hardware components that are commonly used in hotels, making hardware integration simple. Once setup is complete, ModiHost will charge a maintenance fee of [x] per transaction from each service sold by the hotel. This fee will be split between Modihost and pool operators.

3.5 Hotel applicability

Since ModiHost has been designed to be modular and highly customizable, its HMS can be deployed in a wide range of venues, from large chains to holiday villas. The result is one of the most adaptable and versatile HMS ever created.

ModiHost's Software-as-a-Service (SaaS) model provides great flexibility and customizability and can be fine-tuned to meet the needs of each and every client. With the adaptation of AI integration, data provided by each client will be optimally applicable to the venue in question regardless of its size or

features. The information provided to each hotel will therefore be actionable by that hotel, without being saturated with irrelevant data points.

The HMS is system and browser agnostic with manageable application modules, changing and combining modules with no restrictions. This customizability results in a product that is extremely versatile and can be cultivated to fit the operational needs of any hotel. The elastic scalability and pay-per-use model make ModiHost viable for hotels of different scales, categories and types.

Though ModiHost's HMS has specifically been designed to be compatible with an array of hospitality venues, a number of platform features provide specific advantages for particular types:

Hotel chains will benefit from the almost-infinite scalability of ModiHost's cloud-based platform, with ModiHost able to serve any number of rooms simultaneously without delays.

Different tiers of advanced analytics tools will be provided to the different tiers of management within large scale hotel chains. Each hotel and its managers will have access to ModiHost's analytics tools as are applicable to the hotel itself. Regional managers will also be provided with tools which analyze the collective performance of the region as well as providing detailed insights into the individual performance of each constituent hotel. They will be able to monitor a range of metrics including revenue, costs, bookings and reviews.

The AI can analyze data derived from other hotels within the chain to generate projections on guest numbers, revenue generation and cost estimates. These projections can be used by managers to inform their actions and preparations. This could contribute to a significant reduction in costs as hotels will be able to plan in advance and allocate resources accordingly.

Business hotels will benefit from the integration of AI which can be leveraged by business travelers during their stay. ModiHost's AI can further assist in the management of events or conferences by eliminating various routine processes, driving efficiencies and removing the risk of human error.

Resort hotels burdened by having to pay various fixed costs during the low season. With ModiHost, resorts will only pay for services delivered rather than having to subscribe to a fixed fee and there are no monthly or annual obligations.

Apartment hotels and serviced apartment complexes that can be booked in the same manner as a hotel can save on IT infrastructure and HMS fees while providing cutting edge customer experiences.

ModiHost

MODIHOST WHITEPAPER

Business Development

4. Business Development

4.1 Onboarding clients

ModiHost's initial marketing strategy is focused on clients that are likeliest to adopt the product, primarily:

- Newly opened hotels
- Hotels without HMS on premises
- Small and mid-size hotels

These target markets will form ModiHost's beachhead strategy, serving as a foundation for driving broader industry adoption. Once a robust client base has been established, marketing spend will switch to targeting hotels currently using rival HMS. To ensure that ModiHost's product is optimized to suit the needs of clients in particular regions, localized hospitality industry experts, HMS distributors, and a professional marketing agency will work together to deliver a holistic marketing strategy.

4.1.1 Initial token distribution incentive

To prove the efficacy and value of ModiHost, the team will initially invite a test group of 100 hotels to evaluate the system. This limited group of early adopters will be comprised of hotels of different sizes and types, distributed across a range of key global locations. To expedite this project, 5% of the total token supply will be earmarked for these 100 hotels, allocated in proportion to the number of rooms for each hotel.

Once shared, these tokens can be used by the hotel to pay for daily hotel operations and other functions on the ModiHost platform. These tokens cannot, however, be used to create pools. Hotel owners are welcome to join the project during the early stages of its development and can register their interest at the "Join the Platform" section of modihost.ai

4.2 Governance

4.2.1 Board of Directors

Each year, token holders will vote to elect a Board of Directors to serve for a term of one year. This democratic mechanism will protect the interests of token holders. The first election will be held no later than 60 days after the close of the main sale.

To ensure that the ModiHost board is sufficiently representative of the interests of all parties within the ModiHost ecosystem, seats on the board will be allocated to various players in the ecosystem. As such, the board will consist of:

- One board member from the ModiHost developers' team.
- Two board members that are executives in the hospitality industry.
- One board member from ModiHost's blockchain advisors.
- Two board members from the ModiHost community.
- One board member from the ModiHost attorney team.

Following the initial election, the Board of Directors will have a number of duties to perform:

1. Appoint a Chairman of the Board.
2. Write a corporate bylaw.
3. Approve the bylaw with token holders via voting.
4. Register the company.
5. Financial planning.
6. Hire staff and contractors.

7. Business and technical development.

8. Producing monthly progress reports.

The Board of Directors has the power to manage and appoint the company's C-level executives. C-level executives are heads of the departments: Development, Finance and Accounting, PR and Marketing, Operations.

4.2.2 Corporate structure

Modinori Estate PTY is a future focused construction and development company in the international hospitality market. Modinori is an innovative developer, integrating high-tech technologies such as robotics, AI, and blockchain which differentiate the business from its peers. In keeping with its forward-thinking outlook, Modinori Estate PTY is currently creating and developing the ModiHost platform.

To better facilitate the efficient and transparent management of the ModiHost platform, a subsidiary company governed by the Board of Directors will be incorporated in Singapore. Incorporation will be handled not later then 90 days after the tokensale.

This subsidiary will develop, support and evolve the ModiHost HMS platform and its ecosystem. Further, this subsidiary will be responsible for the development of HodiHost and will provide support for the following:

1. ModiHost HMS software and infrastructure

2. AI and Cognitive Computing

3. ModiHost customer related applications

4. Blockchain environment

5. Marketing and community management

Upon the establishment of the new company, all developments, including intellectual rights, software source code, and other platform components currently owned by Modinori Estate PTY, will pass to the subsidiary.

Following the transfer, Modinori Estate PTY will continue its operations in the building and development sector and will continue to advocate for the platform's good standing. In this way Modinori Estate PTY will maintain a supporting role for ModiHost.

The continued operations of the ModiHost HMS and any other operations in regards to ModiHost will be funded by the service fees charged through the ModiHost platform.

Modinori Estate PTY will retain the right to initiate token holders voting on the following:

1. The election or removal of members to the Board of Directors.

2. The approval of financial quarterly planning conducted by the Board of Directors.

3. The addition or development of key platform features.

4. To resolve critical concerns relating to the platform.

ModiHost

MODIHOST WHITEPAPER

Token

5. Token

5.1 Token model

In designing the ModiHost token, the team set out a number of goals that the token must satisfy:

1. Must possess genuine utility.
2. Adequately aligns incentives between different ModiHost stakeholders such as hoteliers, guests, token holders and ModiHost itself.
3. Incentivises use and adoption of the HMS and its token rather than pure speculation.
4. Creates a community and network effects around the project, leading to a competitive moat.
5. Does not lead to the creation of a barrier for hotels not familiar with digital assets.

To meet these goals, the ModiHost token design incorporates two separate models into one synergistic system: a pools based model and a discount token model.

TOKEN ASPECT 1: Lending Pools

This first aspect of the token design aims to give token holders, who may not necessarily be users, a simple way to participate in the system.

Background

ModiHost needs to receive guarantees of remuneration for performing services consumed by the hotel or customer which should be in the form of tokens, since this is the medium that services will be paid for. It is not, however, convenient or realistic for many hotels to hold tokens in order to provide this guarantee.

How it works

Instead of forcing hotels to purchase and hold tokens, which would act as a barrier to usage and so conflict with the fifth goal of the token design, hotels will instead borrow tokens from private lending pools to cover the operation fees they incur for using ModiHost services.

Pool operators receive a fee for providing this service. The fee amount can be configured by the pool operator. Since pool operators need not necessarily be token holders themselves, and pools can custody tokens from multiple token holders, the fee is split between the owners of the tokens in the pool and the pool operator. Again this split is configurable by the pool operator.

Since the period that tokens need to be lent for to cover an operation is short (we estimate around 10 minutes), a mechanism was added to prevent the market from becoming flooded. After tokens are lent, there is a locking period during which they cannot be lent again. This is dependent on the level of collateral a pool operator has staked, for example: when 100,000 tokens are staked, the locking period is 30 minutes and two seconds, and when 5,000,000 tokens are staked, the locking period is just 4 minutes and 15 seconds (see calculations below).

The configurable fees and locking period leads to three levels of marketplace:

1. Pool operators compete with each other to attract token holders to their pool by offering the best returns.

2. Since ModiHost's algorithm will favor lending from the pools with the lowest fees, pool operators also compete with each other to maximize the utilization of their token by setting their fees sufficiently low.

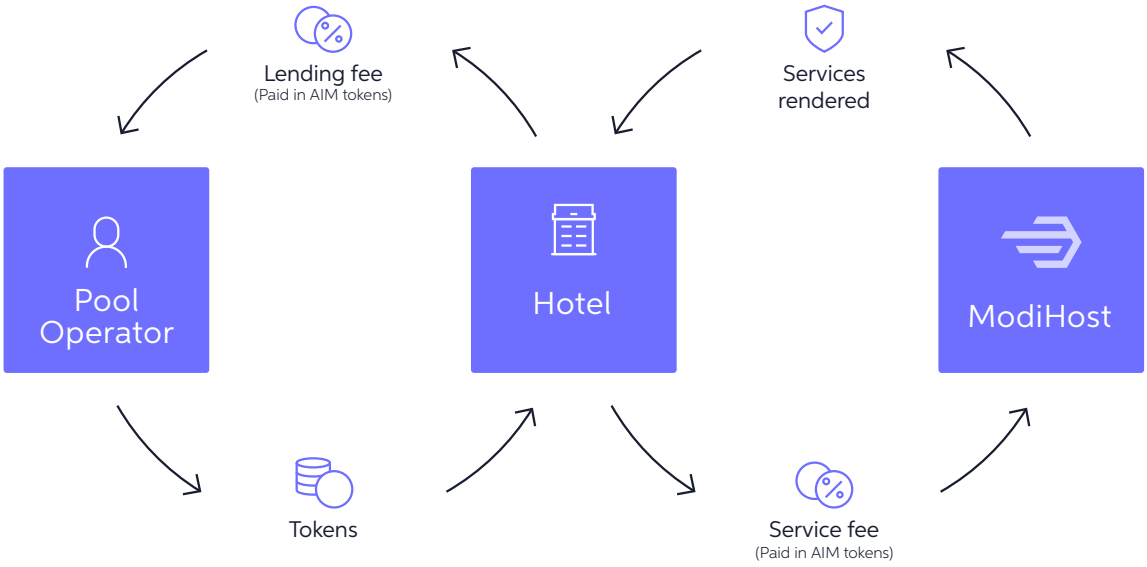
3. Token holders considering custodying their tokens with a pool will want their tokens to be available for lending as much as possible. As such, pools with the most collateral, and as a result the shortest locking periods, will be most attractive.

Pool operators must set the fee to the hotels sufficiently low that the tokens are frequently lent, but also sufficiently high that fees are substantial enough to give the token holders a competitive reward, while also leaving enough profit for themselves.

They must also acquire and stake sufficient tokens to provide competitive locking periods to the market.

Note that hotels may not opt to hold their own balance of tokens and avoid using the pools, as utilization of pools is mandatory.

To ensure sufficient liquidity at all times, and prevent lending pools from being overwhelmed during periods of high demand from hotels, ModiHost will maintain a Main Pool Reserve. This will comprise 8% off all tokens issued, and will be utilized solely for the purpose of providing liquidity to lenders. The Main Pool Reserve will be activated only in emergency situations when high demand necessitates provisioning additional tokens. Tokens from this reserve that are allocated to lenders will be returned to the Main Pool Reserve once demand has returned to normal, with the entire process automated using smart contracts.



The above diagram illustrates how a hotel is borrowing tokens from the pool operator to cover a requested service and returning a lending fee to the pool. After the service operation is completed, the fee to ModiHost is paid by the hotel.

The following formulas are used to operate the pools:

Global variables

[TrevPar] = Average total revenue per available room

[TP] = Token price on the open market

[TH] = Number of hotels using the HMS

[ALP] = Average lending operation period in days

Hotel operation specific variables

[TOA] = Token operation amount - tokens required to be held in escrow to cover transaction

[CL] = Cost of lending - the number of tokens a hotel must pay as a fee to a pool to cover transaction

Pool specific variables

[TOA] = Token operation amount: tokens required to be held in escrow to cover transaction

[CL] = Cost of lending: number of tokens a hotel must pay as a fee to a pool to cover transaction

Pool specific variables

[TA] = Tokens available for lending: total tokens held by the pool less those locked for collateral

[PR] = Pool reward: reward distributed to a pool in tokens

[PI] = Pool interest: percentage interest required by a pool to lend tokens as a number between 0 and 1

[POI] = Pool owner interest: the share of [PR] taken by the pool owner as a number between 0 and 1

[THI] = Token holder interest: the share of [PI] taken by the token holder as a number between 0 and 1

[POR] = Pool owner reward in tokens

[UR] = Token utilization rate over a specific period: the proportion of time lent out or locked compared to being idle

[LO] = Average number of lending operations for a given token over a specific period

[LP] = Locking period as determined by the pool's collateral

[CA] = Collateral amount: tokens staked for collateral

Holder specific variables

[TL] = Tokens lent to a pool by an individual holder

[THR] = Token holder reward in tokens

Calculate:

1. **[LP]** = $\frac{5.7 * 10^8}{\sqrt{CA}}$

   # locking period after each lending operation event during which the tokens are available for lending

2. **[CL]** = min{TOA,TA} * PI

   # cost of lending tokens to a hotel from a specific pool

3. **[THR]** = TL * (PI * THI) * UR * LO

   # Return on lending tokens to a pool taking into account pool/token utilization rate

4. **[POR]** = TA * (PI * POI) * UR * LO

   # pool owner's reward

Example

This scenario assumes a hotel needs to lend enough tokens to cover a $1,000 transaction. Given a token price of $0.4 and the most favorable pool interest at 0.5%, from a pool with enough tokens to fulfill the request. The cost of lending would be:

1. **[TOA]** = $1,000 / $0.4 = 2,500

2. **[CL]** = 2,500 * 0.005 = 12.5

The following scenario calculates the return over a one-year period for Alice who owns 10,000 tokens and lends them to Pool X. Pool X has an interest rate of 0.5% and takes a 10% cut of this for itself, distributing 90% to the token holders.

During this year, 100,000 tokens owned by the pool were used for collateral and as such the locking period was 30 mins two seconds and we assume an average of 10 minutes for the lending operation to complete, giving a period of 40 minutes token unavailability per operation (or 13,140 operation windows per year).

Lastly, we assume tokens were not locked or lent 100% of the time but were idle 99% of the time in the pool, giving a utilization rate of 1%.

3. **[THR]** = 10,000 * (0.005 * 0.9) * 0.01 * 13140) = 5,913

This scenario would see token holders custodying tokens with the pool seeing 59% returns per year.

Pool X contained on average 5,000,000 tokens available for lending during the year and so we can calculate the reward as follows:

4. **[POR]** = 5,000,000 * (0.005 * 0.1) * 0.01 * 13140 = 328,500

Benefits

The lending pool mechanism has several advantages:

1. Incentivizes token holders to become active participants in the ModiHost ecosystem, thereby partially satisfying our third goal: “Incentivizes use and adoption of the HMS and its token rather than pure speculation.”

2. Allows token holders to benefit fully from the value of their tokens by funneling some value from ModiHost, thereby partially satisfying our first goal: “Funnels some of the value captured by ModiHost to the token, which must possess genuine utility and clear value capture mechanisms such that it can be valued using a traditional, well understood discounted cashflow analysis.”

3. Incentivizes the promotion of ModiHost since participation further aligns the interests of holders with platform adoption, thereby partially satisfying our second goal: “Adequately aligns incentives between different ModiHost stakeholders such as hoteliers, guests, token holders and ModiHost itself.”

TOKEN ASPECT 2: Rebate System

While the first token aspect satisfies some of the token goals outlined above, further utility was needed to fully satisfy the third and fourth goals. The optimal model for achieving this was deemed to be a rebate system.

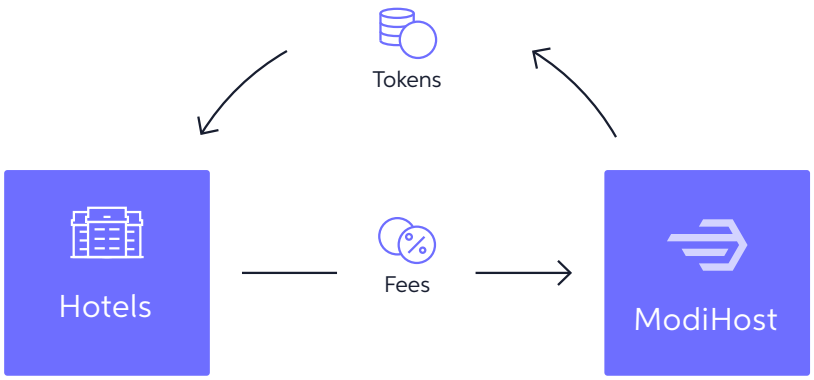
Background

Hotels are incentivized to reduce the portion of the fee paid to ModiHost as much as possible, as although this fee is relatively small, hotel margins are often tight and even a small percentage saving can become significant.

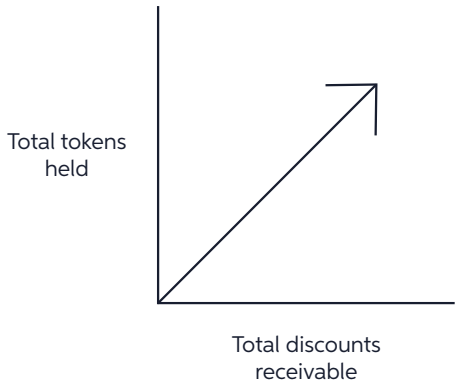
How it works

The amount of rebate received depends upon a simple calculation. The calculation is based on two parameters: 1) stake per room and 2) total tokens spent per hotel.

Each time a hotel requests a service from ModiHost, a record is made of how many tokens are currently staked by this hotel and how much the hotel spent in the same month. At the end of the month, ModiHost rebates each hotel, according to the hotel's spending and staking. ModiHost will return this fee to hotels in tokens rather than fiat currency.



The effect of this is that hotels will amass an ever increasing stack of tokens over time. The greater the number of ModiHost tokens held by a hotel, the greater the rebate that that hotel is eligible to receive.



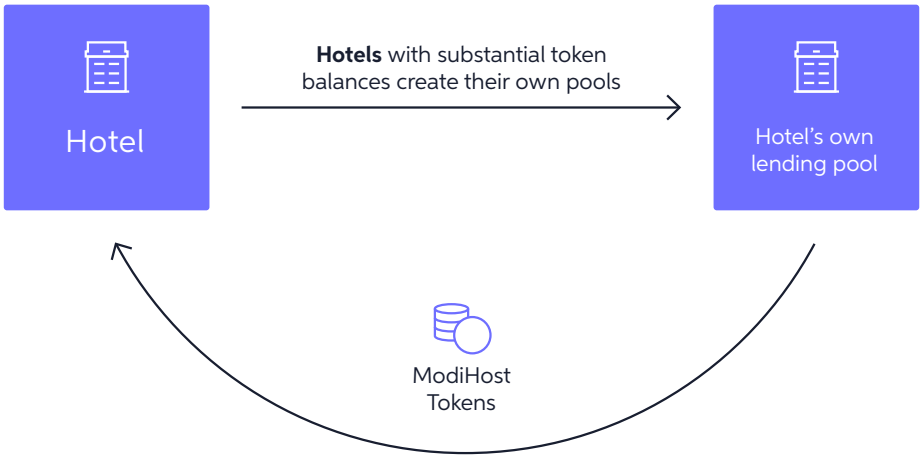
As outlined below, the rebate each hotel is eligible for is based on the total fees paid by that hotel and the amount of ModiHost tokens that the hotel has staked per room. So, in order to receive the maximum available discount (50% of fees paid), hotels must:

1. Stake the relevant number of tokens required, until the discount is equal to 50% of the total fees paid.

2. Generate as much revenue as possible on the platform so as to increase the value of the rebate that they will receive.

The amount of revenue distributed to an individual hotel is always capped at a percentage of the amount of fees paid for using the platform. As a result, the value of the ModiHost token is correlated to the usage of the ModiHost platform, based on the rebate pool allocated to users, effectively aligning incentives between the owners of the project and holders of the token.

As hotels build up a significant balance of tokens, they may choose to leverage the first mechanism and start their own lending pool, effectively lending from themselves with their own tokens, thus eliminating the need to pay fees to other pools and creating an additional revenue stream.



Benefits

The rebate system provides several additional and complimentary benefits over the lending pool mechanism:

1. The rebate system acts as a powerful loyalty mechanism that will be key to driving adoption of the HMS in a competitive landscape. This, again, satisfies the third goal: “Incentivizes use and adoption of the HMS and its token rather than pure speculation.”

2. Since hotels will build up a balance of tokens over time simply by using the system, hotels will effectively become investors in the platform. This aligns incentives between the hotels, token holders and ModiHost thus satisfying the second goal: “Adequately aligns incentives between different ModiHost stakeholders such as hoteliers, guests, token holders and ModiHost itself.”

3. Due to this, hotels will naturally want ModiHost to succeed and achieve wider traction, leading to them becoming part of the ModiHost community. The balance of tokens built up over time will not transfer to another HMS, leading to loyalty among hotels and in effect a competitive moat forming, thus contributing to the fulfilment of the fourth goal: “Creates a community and network effects around the project, leading to a competitive moat.”

Rebate calculation

The total available rebate is 50% of the total amount of fees paid. This rebate may be achieved through staking, spending or a combination of both, according to these rules:

Current balance per room (X1):

10k tokens per room – 10% cashback

20k tokens per room – 20% cashback

50k tokens per room– 50% cashback

Total spent (X2):

0–100k tokens – 2% cashback

100k tokens – 10% cashback

200k tokens – 20% cashback

500k tokens – 30% cashback

1m+ tokens – 50% cashback

Total monthly cashback = MAX (x1,x2)

This approach offers a base rebate rate of 2%, which every participating hotel will receive. When the total spent amount rises, the cashback rises accordingly.

Note on unused rebate pool: It is important to note that, unless all users are perfectly efficient and stake the exact number of tokens required to offset the maximum amount of fees paid in a given month, there is likely to be some portion of the rebate pool that goes unallocated. This being the case, it is important to decide what to do with the unused tokens in this pool. Given the rebate pool represents value ModiHost has committed to returning to users, these additional funds will be allocated to ModiHost to be used to incentivize platform growth.

Preventing barriers

As mentioned in the fifth goal, the token must serve to improve the experience of hotels and improve the chances of ModiHost's success. It cannot be allowed to form a barrier to adoption.

The barriers to entry of buying crypto assets are still significant for non-crypto businesses and individuals; going to an exchange, purchasing tokens and moving those to a wallet is a challenge that hotels and guests cannot be expected to overcome.

ModiHost and the AIM token will mitigate this barrier as much as possible to encourage as many parties as possible to stake in order to increase token demand and utility.

ModiHost will always abstract away the acquisition process and custody of tokens so that if they prefer, hotels can do everything directly through the HMS without needing to deal with wallets, staking contracts, exchanges etc.

Additionally, the need for hotels to actively purchase tokens is mitigated since the discount token mechanism has the effect of automatically building up each hotel's staked balance of tokens. This completely eliminates any barriers in acquisition and ensures that a high proportion of hotels will be able to become token holders.

The lending pool mechanism can be fully abstracted away so that the hotels see only a percentage fee added to their bills.

Summary

The two token mechanisms are synergistic and together satisfy all of the goals outlined in the introduction:

1. Funnels some of the value captured by ModiHost to the token via the lending fee to token holders and fees distributed as rebates to hotels staking tokens.

2. Since most hotels will become token holders and as such will benefit from the success and broad adoption of ModiHost, hoteliers, token holders and ModiHost themselves are aligned.

3. Incentivizes use and adoption of the HMS because the rebates afforded by holding ModiHost tokens acts as a powerful loyalty mechanism that will drive adoption of the HMS in a competitive landscape and because the lending pools mechanism incentivizes token holders to become active participants in the ModiHost ecosystem.

4. Creates a community and network effects around the project because the rebate system distributes tokens to hotels rendering them investors in the ModiHost ecosystem. It will thus advantage these hotels to promote ModiHost since the value of the ModiHost tokens they own is directly correlated to the adoption and success of the ModiHost network. Since these tokens cannot be transferred to another HMS, hotels will naturally remain loyal to ModiHost thereby creating the desired competitive moat.

5. Does not lead to a barrier for hotels unfamiliar with digital assets because the acquisition process and custody of tokens will be abstracted away. Through the rebate system, tokens are automatically allocated to the hotels for staking. The lending pool mechanism is abstracted away in such a way that hotels will experience the process of paying for services in a way that is not significantly different to directly paying in fiat.

5.2 Token metrics

Total supply: 1,000,000,000 (one billion)

Tokens for sale: 750,000,000 (seven hundred and fifty million)

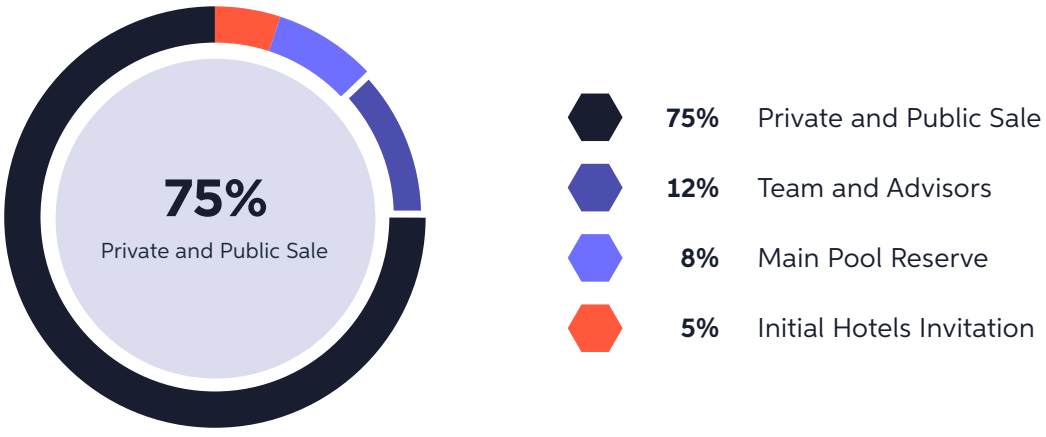
In both the pre- and main sales the minimum purchase amount will be 1,000 tokens. There will be no upper limit on purchase amount.

Tokens can be purchased in EOS, ETH, BTC, XRP, BCH, LTC and DASH.

Hard cap: $21,109,000.

Soft cap: $16,678,000.

5.3 Token distribution



All tokens allocated to team members and advisors will be locked up for a period of three years for purposes of incentive alignment.

5.4 Use of funds

The ModiHost team recognises the need for flexibility when planning for uses of funds under uncertain fundraising conditions. Therefore, the team intends to dedicate different ratios of funds to different areas of project development as would be most appropriate under different fundraising conditions. The table below provides a provisional summary of how funds will be allocated under a scenario in which the project reaches its soft cap in comparison to a scenario in which the project reaches its hard cap.

Yearly expenses (in thousands, $)		**soft cap/hard cap**
	1st year	**2nd year**
AI Developers Team	690 / 1 242	828 / 1 518
Cognitive Computing Developers Team	375 / 500	500 / 625
Blockchain Developers Team	440 / 440	440 / 440
HMS Developers Team	896 / 1 388	1 080 / 1 450
Apps Developers Team	1 080 / 1 450	1 080 / 1 450
Web Developers Team	320 / 465	461 / 604
Apps / Web Developers Team	152 / 200	240 / 288
Marketing & PR Team	285 / 380	285 / 380
Legal Team	115 / 115	115 / 115
Platform Tech Support Team	205 / 205	557 / 557
Hospitality / Blockchain / AI Advisors	72 / 72	72 / 72

Yearly expenses (in thousands, $)		soft cap/hard cap
	1st year	**2nd year**
Office employees	450 / 450	891 / 891
Board of Directors expenses	240 / 240	240 / 240
IT and Hardware infrastructure	102 / 102	216 / 216
Banking and Accounting	19 / 22	25 / 28
General business expenses	45 / 55	47 / 62
Business trips and accommodation	120 / 120	175 / 175
Office rent expenses	780 / 780	780 / 780
Equipment and fixture	109 / 133	27 / 46
Marketing & PR expenses	455 / 617	680 / 955
Conferences and Events attendance	60 / 100	180 / 270
Platform & Software security audit	26 / 26	77 / 77
Smart contract & Ecosystem security audit	45 / 45	45 / 45
Unpredictable expenses	200 / 200	350 / 350
Total:	**7 281** / 9 347	**9 397** / 11 762
Grand Total (SoftCap / HardCap):	**16 678 / 21 109**	

5.4.1 Teams

As the above table indicates, a significant portion of the total funds raised will be allocated to ModiHost's specialist development teams. Due to the multifaceted nature of ModiHost's HMS, a number of professional teams from across a wide range of disciplines are required in order to properly build-out the technical solution and to ensure the comprehensiveness and functionality of the final product.

5.5 Auditing

To ensure the highest quality in every area of ModiHost HMS, independent auditors will be brought in to assess each component of the solution. This will include audits of ModiHost's security, smart contracts, infrastructure, data centre storage and source code. In doing so, the ModiHost team will ensure that all necessary provisions are in place and that ModiHost HMS meets the team's high standards from launch.

5.6 Data protection and security

ModiHost will implement the most stringent data protection provisions possible. Data protection and privacy will be a major consideration from the outset, and will be "baked in" to the ModiHost source code.

To affirm the high standards of security on the platform, ModiHost will have its code audited by an independent team of data security specialists. It will also set a portion of tokens aside for bug bounties, inviting outside sources to find and report any security issue.

By default, data produced by entities within a hospitality group will be shared with other entities in that group. Sharing permissions will be easily amended should any entity not wish to share its data in this way. However, it is recommended that users share their data globally to improve the information and insights that ModiHost can provide.

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Competitor Analysis

6. Competitor Analysis

Following a comprehensive review of the HMS market, the team has found no comparable AI-driven Hotel Management solutions to ModiHost. Though there are hundreds of HMS on the market and it would be impossible to compare ModiHost against all of them within this whitepaper, the table below provides a comparison with a sample of some of the major HMS.

Pricing	Pricing	Fully scalable	Applicable to a full range of hospitality venues	Compatible with blockchain, AI, IoT and robotics	Flexible to fit the needs of each client hotel	Prevents data siloing
Cloudbeds	Per month & property/by quote	✖	✖	✖	✖	✖
Maestro PMS	By quote	✖	✖	✖	✖	✖
Little Hotelier	Per month & property/by quote	✖	✖	✖	✖	✖
Oracle	By quote	✖	✖	✖	✖	✖
Protel	By quote	✖	✖	✖	✖	✖
Msi Solutions	By quote	✖	✖	✖	✖	✖
ModiHost	Pay-per-use	✔	✔	✔	✔	✔

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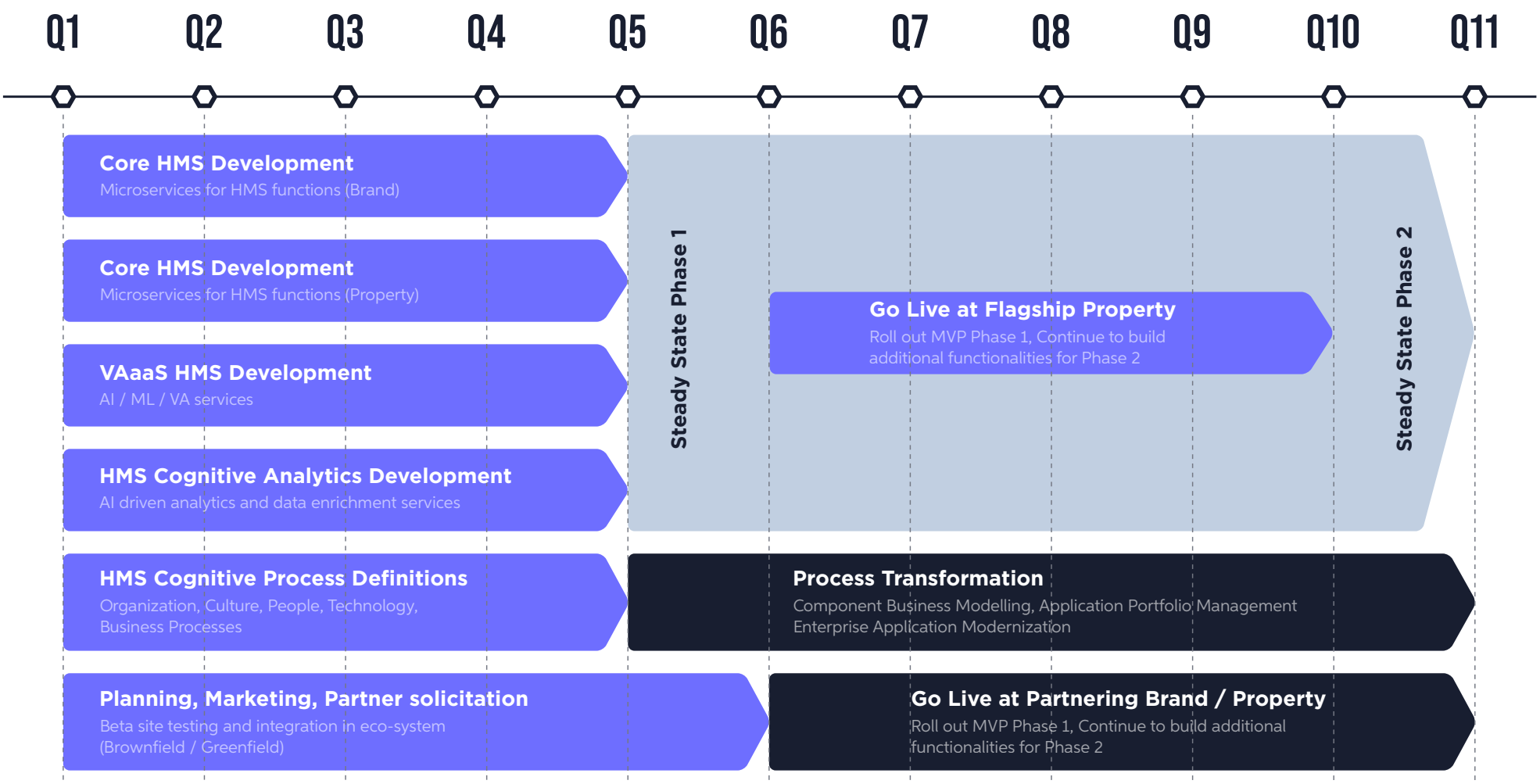
Roadmap

HMS Architecture Roadmap at a glance (Quarterly)



7. Roadmap

Start Month / Week	Finish Month / Week	Category	**Activity** and details	**Dependency**
PHASE 0				
Quarter 1				
-2 / 1	**-2** / 2	General	**Design data capture platform** Architecture, Design, Define Data Model	Scout for brand / property to integrate / uplift data
-2 / 2	**-2** / 3	General	**Develop data capture platform** Develop and unit test	Availability of brand to integrate; hardware / software availability
-2 / 3	**-2** / 4	General	**Upload data** Bring data on cloud platform	Agreement with brand / property to integrate and upload data
-1 / 1	**-1** / 4	General	**Mobile app** New customer data input	Availability of beta customers, agreement to onboard
-1 / 2	**-1** / 4	General	**Social Media integration** Facebook, Twitter, Instagram	Scout some interested parties and customers, agreement to connect
-1 / 3	**0** / 4	General	**Stabilize data capture platform; UIN issue** Ensure readiness for Phase 1; corelate all records to UIN	Availability of clean data records, data governance, security; E2E testing
PHASE 1				
Quarter 2				
1 / 1	**1** / 4	AI	**Chatbot with NLP integration** Architecture, Design, Define Intents	Scout for a group of beta customers
1 / 1	**1** / 4	IoT	**IoT design** Architecture, Design, Define Integration Model	Scout for brand / property to integrate FMS IoT data – look for existing capabilities

	Start Month / Week	**Finish** Month / Week	Category	**Activity** and details	**Dependency**
Quarter 2	**1** / 1	**1** / 4	Analytics	**Analytics design and use case definition** Architecture, Design, Define Data Sources	Scout for brand / property to integrate / uplift data
	1 / 1	**2** / 3	HMS	**Omni-channel booking engine design** Architecture, Design, Define Data Model	Availability of brands / providers to integrate; hardware / software readiness; Open APIs
	1 / 1	**2** / 3	HMS	**Dynamic Pricing Engine** Architecture, Design, Define Data Model	Availability of brands / providers to integrate; hardware / software readiness; Open APIs
	2 / 1	**2** / 3	IoT	**Define process and workflows** Data flow and triggers across systems	Availability of brand to integrate; brand hardware / software system details
	2 / 1	**3** / 4	AI	**Chatbot Development** Development and Unit Test	Test with beta customer data
	2 / 1	**5** / 3	Analytics	**Analytics engine development** Develop and Unit Test	Availability of brand to integrate; hardware / software availability
	2 / 3	**6** / 4	HMS	**Booking engine development** Develop and unit test	Agreement with brand / property to integrate and exchange data
	2 / 3	**6** / 4	HMS	**Pricing Engine development** Develop and unit test	Agreement with brand / property to integrate and exchange data
	2 / 4	**8** / 4	IoT	**IoT integration** Interoperability with FMS / device	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
Quarter 3	**4** / 1	**7** / 4	AI	**Integrate PMS / HMS IoT** Facilities management	Scout some interested parties and customers, agreement to connect

	Start Month / Week	**Finish** Month / Week	Category	**Activity** and details	**Dependency**
	5 / 4	**9** / 4	Analytics	**Upload brand data, E2E Test** Bring data on cloud platform	Agreement with brand / property to integrate and upload data
Quarter 3	**6** / 1	**8** / 4	AI	**Enhance Concierge** Order services, tours	Availability of beta customers, agreement to onboard
	6 / 3	**10** / 4	IoT	**AI Chatbot NLP integration** Interoperability with voice commands	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
	7 / 1	**10** / 2	HMS	**Integrate with AI chatbot and end to end testing** Test across brands with omni-channel	Onboarding new brands and properties into HMS; integrate with their core systems (alternately develop and test with provider Open APIs)
Quarter 4	**7** / 1	**11** / 1	Analytics	**Data Analytics, Insights** Value added service to brands	Agreement with brand / property to buy value added services
	7 / 1	**11** / 2	AI	**Enhance HMS functionality** Integrate with booking, pricing	Booking and pricing engine functionality ready
	10 / 2	**11** / 2	IoT	**Enhanced capabilities** Integrate additional functionalities	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
Quarter 5	**10** / 2	**11** / 2	Analytics	**Enhanced capabilities** Add additional functionalities	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
	10 / 3	**12** / 4	HMS	**Stabilize platform – Steady State Phase 1** Ensure readiness for Phase 2; corelate all records to UIN	Availability of clean data records, data governance, security

	Start Month / Week	Finish Month / Week	Category	**Activity** and details	**Dependency**
Quarter 5	**11** / 1	**12** / 4	AI	**Stabilize platform – Steady State Phase 1** Ensure readiness for Phase 2; corelate all records to UIN	Availability of clean data records, data governance, security
	11 / 3	**12** / 4	IoT	**Stabilize platform – Steady State Phase 1** Ensure readiness for Phase 2; corelate all records to UIN	Availability of clean data records, data governance, security
	11 / 3	**12** / 4	Analytics	**Stabilize platform – Steady State Phase 1** Ensure readiness for Phase 2; corelate all records to UIN	Availability of clean data records, data governance, security
	PHASE 2				
Quarter 6	**13** / 1	**13** / 4	IoT	**Architect for futuristic IoT** Data flow and triggers across systems	Availability of brand to integrate; brand hardware / software system details
	13 / 1	**13** / 4	Analytics	**Additional analytics use cases definition** Architecture, Design, Define Data Sources	Scout for brand / property to integrate / uplift data
	13 / 1	**14** / 4	AI	**Text and Voice driven booking** Mobile app / Omni-channel	Stabilized platform from Phase 1; E2E Testing
	13 / 1	**17** / 4	HMS	**Airlines booking integration** Develop and unit test	Agreement with brand / providers to integrate and exchange data; Open APIs funactionalities
	13 / 1	**17** / 4	HMS	**Rental Car/ Vac integration** Develop and unit test	Agreement with providers to integrate and exchange data; Open APIs
	13 / 1	**20** / 4	IoT	**IoT enhancement** Additional devices and FMS integration	Brand / property to integrate FMS IoT data and existing capabilities

	Start Month / Week	Finish Month / Week	Category	**Activity** and details	**Dependency**
Quarter 6	**13** / 1	**21** / 4	HMS	**Core HMS/PMS functionality enhancements** Microservices based HMS/PMS functionalities	Hardware / software readiness; Open APIs; scout brands to buy Microservices based modular funactionalities
	13 / 1	**23** / 4	HMS	**Omni-channel booking and pricing** Include more brands and integrate	Availability of additional brands & properties / providers to integrate; hardware / software readiness; Open APIs; Ongoing activity
	14 / 1	**18** / 2	Analytics	**Analytics development** Develop and Unit Test	Availability of brand to integrate; hardware / software availability
	14 / 1	**18** / 4	IoT	**Futuristic IoT development** Code and Unit Test	Agreement with brand / property to integrate for exchanging data and interoperate
	15 / 1	**16** / 4	AI	**Text and Voice driven ordering** Service Orders – concierge plus	Agreement with brands and providers to exchange data and interoperate; E2E Testing
Quarter 7	**17** / 1	**24** / 4	AI	**Additional value- added services** Develop enhanced CX – Prototype ver 1	No dependency, parallel activity – scout beta customers when ready (will carry on beyond Phase 2)
	18 / 1	**22** / 4	AI	**Airline services** Instant feedback through AI Chat app	Agreement with Airline brands and providers to exchange data and interoperate; E2E Testing
	18 / 1	**22** / 4	AI	**Car / Other Services** Instant help / feedback	Agreement with Car Rental brands and service providers to exchange data and interoperate; E2E Testing
	18 / 1	**23** / 4	HMS	**Integrate with AI chatbot and end to end testing** Test all functions across brands with omni-channel	Agreement with providers to integrate and exchange data; Open APIs
	18 / 3	**18** / 4	Analytics	**Upload brand data; E2E test** Bring data on cloud platform	Agreement with brand / property to integrate and upload data

	Start Month / Week	**Finish** Month / Week	Category	**Activity** and details	**Dependency**
Quarter 8	**19** / 1	**22** / 4	IoT	**AI Chatbot NLP integration** Interoperability with voice commands	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
	19 / 1	**23** / 4	Analytics	**Additional Data Analytics, Insights** Value added service to brands / consumers	Agreement with brand / property to buy value added services; opt-in for consumers
	20 / 1	**22** / 4	Analytics	**Enhanced capabilities** Add additional functionalities	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
	20 / 1	**24** / 4	IoT	**Stabilize platform – Steady State Phase 2** Ensure readiness for Phase 2+/3; corelate all records to UIN	Availability of clean data records, data governance, security
Quarter 9	**23** / 1	**23** / 4	IoT	**Enhanced capabilities** Integrate additional functionalities	Agreement with brand / property to integrate for exchanging data and interoperate; E2E Testing
	23 / 1	**24** / 4	AI	**Stabilize platform – Steady State Phase 2** Ensure readiness for Phase 2+/3; corelate all records to UIN	Availability of clean data records, data governance, security
	23 / 1	**24** / 4	Analytics	**Stabilize platform – Steady State Phase 2** Ensure readiness for Phase 2+/3; corelate all records to UIN	Availability of clean data records, data governance, security
	24 / 1	**24** / 4	HMS	**Stabilize platform – Steady State Phase 2** Ensure readiness for Phase 2+/3; corelate all records to UIN	Availability of clean data records, data governance, security

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Team

8. Team

Advisors

Prof. Koen Hindriks

Koen is a full professor Social Artificial Intelligence, at the Vrije Universiteit (VU) Amsterdam.

He has also been a project manager at Accenture and is co-founder of Interactive Robotics. His research is aimed at making (ro)bots more social by using theories from psychology en by developing and applying cognitive agent technology. He has developed social robots for education, health care, and e.g. marketing research.

Ali Chaudhry

Ali Chaudhry is a postgraduate researcher in Artificial Intelligence at University College London.

For research, he is using Bayesian Inference to investigate the issues of transparency and fairness in various machine learning algorithms. He has also helped a number of companies in fintech, edtech and agritech in applying machine learning in real-time on their entire product lifecycle from relevant data collection to deploying production ready models and gradually improving their performance. In his spare time, he plays with meta reinforcement learning algorithms.

Abhinav Aggarwal

A globally recognized thought leader in Cognitive, Cloud, Analytics, Mobile, Social, Security, Blockchain, eCommerce, and BPM. Closed deals over $500mn and build pipeline for $7bn. As an IBM Chief Architect and the Open Group Certified Distinguished Architect, his expertise in big data analytics, cloud, and cognitive computing enables enterprises to effectively redefine strategy, improve product design, and increase operational efficiency with a renewed focus on the customer.

An expert at designing creative end to end solutions enabling integration of social, weather, IoT, streaming, and geo-spatial feeds in near real-time with internal/external data sources to drive actionable insights for next best action. 20+ years of deep experience in architecting and rolling out complex solutions involving cognitive applications such as aiding domain experts to make decisions quickly based on facts, automating call centers, online chat support, assisting professionals in diagnosing problems and proposing remedies rapidly with an acceptable level of confidence, and reducing equipment downtime by predicting failure points to co-schedule maintenance. Led setup of CoEs for large enterprises with global operations as well as engagements in patient care, financial, banking, health insurance, mutual funds, telecom, M&E, electronics, manufacturing, distribution, airlines, and hospitality.

Jean-Marc Goossens

Jean-Marc Goossens was born in Brussels in 1963. Mr Goossens studied at the 'European School of Brussels' where he learnt to speak German, Dutch and English. After graduating as a 'Master of Laws' at the 'Université Libre de Bruxelles' and at the 'Université Catholique de Louvain-La-Neuve', Mr Goossens became a member of the Bar of Brussels in 1988 and has been ever since.

Jean-Marc Goossens is a business attorney specializing for more than 25 years in international mediation and international investments. Mr Goossens published numerous articles and studies on international financial and fiscal subjects. Numerous articles and studies by Mr Jean-Marc Goossens are authorative on the subject. The business lawyer is frequently quoted in both the Belgian and the international press.

He is a progressive and renowned Blockchain Lawyer. Attorney Jean-Marc Goossens offers legal services tailored to the unique needs of each client working with blockchain technology. He ensures that your company stays compliant and up to date with the constantly changing crypto laws and regulations.

Abhishek Modsingh

Abhishek comes with 7+ years of business development background and deep domain knowledge in Hospitality software's, SaaS, IT vendor management and the ERP/CRM space. His connections across the industry have helped raise awareness and develop ModiHost' s potential in India.

He has a deep understanding of the technology and is extremely patient and guides the team and our customers with dedication. He feels that the technology, specifically Artificial Intelligence and Blockchain, has the ability to transform current business processes as well as define businesses not yet in existence.

He has completed Bachelor's degree in Business Administration and love to spend time in creating various random paintings in his free time.

Core team

Stephan Radwitz
CEO

Several iconic construction projects such as the Carl-Benz Stadion, multi-purpose stadium in Mannheim and the Gläserne Manufaktur in Saxony, Germany.

Krish Mahajan
CTO

UPI (Unified Payments Interface) for the National Payments Corporation of India which is handled over 150 million transactions in its first month of operation.

Fiona Yalcin
CFO

With a background in Human Resource Management and Development in the Hospitality Industry, she is the ideal person on the Modinori team.

Specialist teams

ModiHost's HMS incorporates a number of cyber disciplines including AI, Big Data, Blockchain, IoT and Robotics. To ensure that every element of the ModiHost solution is of a professional standard, ModiHost has taken on dedicated teams of expert engineers and developers in each of the above fields.

Sanam Khan
Principle Project Manager

Oneeb Ahmed
VP Solution Architecture & Blockchain

Shoaib Bazmi
Software Engineer

Qirat Ameen Marchant
Senior Software Engineer

Subhan Nizar
Software Engineer

Abdul Moiz
Software Engineer

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Closing Statement

9. Closing Statement

In the 21st century, technology has disrupted every major industry, but the effects of this software-driven revolution have been unevenly distributed. Some sectors have flourished, as participants have embraced new trends, unleashing a wave of innovation and upending traditional business models in favor of nimbler and more efficient alternatives.

The hospitality industry has not been excluded from the tech revolution, but certain verticals have been slow to latch onto the opportunities afforded by the digital economy and all that comes with it: Big Data, AI, machine learning and IoT. Hotels have been particularly badly affected, losing ground in the smartphone era to sharing economy services such as Airbnb.

While there are compelling reasons for the inability of hotels to capitalize on this opportunity to date, it is evident that this state of affairs can and must change. Diminishing margins, eroding market share and reduced guest satisfaction levels are proof that the hotel industry must be transformed if it is to remain competitive.

Software alone cannot remedy all of the problems that are endemic to the hotel trade, but it can form the foundations of a more efficient, scalable and less capital-intensive system that maximizes revenue while increasing guest satisfaction. ModiHost's HMS provides a solid framework for the industry to evolve and to adopt better practices, not utilizing technology for technology's sake, but to effect positive change in an industry that has been stagnant for too long.

ModiHost's solution will liberate independent hotels and small chains from the yoke of overpriced and suboptimal HMS. It will enable accommodation providers to compete with the largest hotel chains through minimizing human resources and operational costs, while boosting occupancy rates and raising RevPAR. The future is one in which artificial intelligence automates most of the processes that are performed manually today. That future is now close at hand, with the launch of ModiHost's intelligent HMS marking a breakthrough in realizing this goal.

Through sharing data-driven insights into guest behavior, small hotels can work together to build an ecosystem that is greater than the sum of its parts. At its heart will be an AI-powered HMS that's configured to meet their needs, future-proofing hotels and giving them the edge to compete into the next decade and beyond

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Legal Statements

10. Legal Statement

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- have read carefully and are legally bound by MODINORI Tokens agreement and Privacy Policy;
- authorized and have full legal capacity according to the relevant laws in their home jurisdiction to enter into business and contract with MODINORI company (it is token purchasers and users responsibility to ensure that no prior or subsequent form of approval, notification, registration or license is required in their country);
- have full authorization to act on behalf of the legal entity they represent, for example in the course of the purchasing of MODINORI tokens;

- purchase or use MODINORI tokens only to have access to the Modinori platform and services and not for the purpose of speculative investment or usage or for any illegal activity as for example money laundering and the financing of terrorism.

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