CRM CENTRIC ARCHITECTURE FOR HOSPITALITY

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About HTNG

Hospitality Technology Next Generation (HTNG) is a non-profit association with a mission to foster, through collaboration and partnership, the development of next-generation systems and solutions that will enable hospitality companies and their technology vendors to do business globally in the 21st century. HTNG is recognized as the leading voice of the global hospitality community, articulating the technology requirements of companies of all sizes to the vendor community. HTNG facilitates the development of technology models for hospitality that will foster innovation, improve the guest experience, increase the effectiveness and efficiency of hospitality companies, and create a healthy ecosystem of technology suppliers.

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1 Introduction

The definition of 'hospitality' is the friendly and generous reception and entertainment of guests, visitors, or strangers. Therefore, it is ironic that traditional hospitality systems were designed around managing rooms and events as opposed to the guest.

Internet commerce has changed this. Our guests are now used to tailored experiences and offers when they shop for goods and services online. Systems allow customers to provide details of their interests and preferences and track their online behavior to customize the offers presented to them. Indeed, the growth opportunity is around the delivery of experiences rather than the traditional hotel stay. Also, there is an expectation amongst some, particularly the millennials, that they will not have to waste time explaining requirements or searching unnecessarily for the goods and services they seek.

This change in consumer behavior, and the fact that Online Travel Agents (OTAs) adopt this customer-centric approach, is forcing hoteliers to rethink the way in which they interact with guests. However, they are constrained by the architecture of legacy IT solutions.

Therefore, the HTNG CRM Workgroup has developed the *CRM Centric Architecture* White Paper to define use cases and associated data sets that allow companies to define a CRM solution for any application to connect through web services. This would allow hotel staff to have a single common view of the guest through all operational systems, thereby delivering a consistent interaction with the guest whether they are a resident, using the bar, restaurant, spa or other facility.
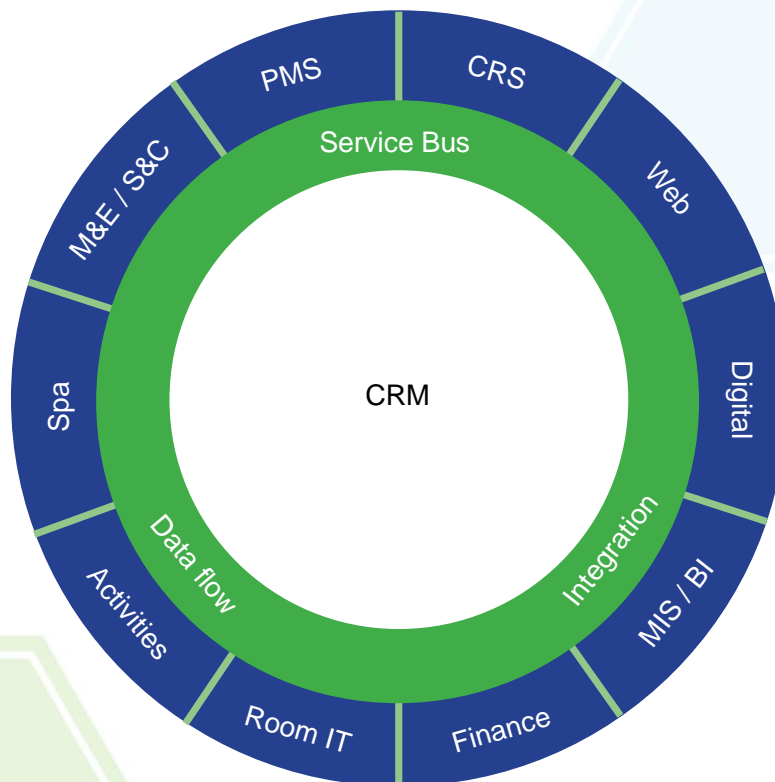
Figure 1 CRM Centric Overview

Vendors can use this white paper to develop a decoupled CRM solution where all applications become consumers and potentially contributors; or to extend the CRM capability within existing applications. Most importantly, it creates a common standard for integration of systems with CRM data.

2 Customer & Guest Data

The following sections cover basic principles of guest data management, and a breakdown of Property Management Systems (PMS) functionality & reporting. Effective data management will increase the value and accuracy of your CRM system. These sections will help the reader build an effective CRM-centric strategy.

2.1 Data Standardization

A large amount of bad data generates from human error. If an organization doesn't have any sort of standards or policies to articulate how data should be entered into the CRM, different iterations of the data will exist and be committed to the CRM. The solution is data standardization, also known as normalization, which creates an enforced, organized and consistent environment for entering data into the CRM.

2.2 Duplicate Data Cleanse

Duplicate guest data leads to errors and negative interactions with the guest. Duplicate removal is not the only consideration when looking for a fresh start, but is arguably the most critical. To do this, clean your existing CRM and then stop the duplicated data before it enters your system ever again. Hoteliers should evaluate their current data sources and remove any duplicative integrations or data sets.

2.3 Complete Missing Data

CRMs include a vast number of data markers. These markers are a literal road map to filling in missing data. For example, if a hundred percent of the emails for a particular company have the email format of Firstname.Lastname@domain.com, then the system may fill in missing emails for other contacts with confidence. If you have the email domains for contacts, but the account record is lacking a website, that can be filled in too.

2.4 Systems and Data

Conceptually, there are three absolutely mandatory data sources that need to be integrated into any effective CRM solution: a PMS, reservations and reservation nightly breakout.

2.4.1 PMS

The first assumption is that the PMS data is flowing into the CRM solution at near or fully real time. For example, if the CRM solution is delivering transactional e-mails, reservations (new and modified) and associated profiles are required very close to real-time in order to deliver email confirmations and cancellations. A by-product of close to real-time flow for reservations and profiles comes by generating pre-arrival and in-stay/welcome emails from that flow. Check-outs/departures can theoretically flow nightly, as post-stay emails are typically sent in a single batch once daily.

In terms of PMS data detail, the following are recommended:

- Reservations (on-the-books, in-house, cancelled, checked-out, no-show and waitlisted)
- Reservation nightly breakouts
- Core guest contact information
- Detailed folio transaction postings
- Comments/remarks (reservation and profile-centric)
- Special requests/interests (reservation and profile-centric)

2.4.2 Reservations

Reservation data is at the heart of the PMS data used in the CRM. When tied to a guest, reservation data has value in a number of key areas, including:

- Transactional Emails
- Targeting for Marketing Campaigns
- Tracking of Campaign Responsiveness/ROI
- Guest Profiling
- Guest Lifetime Value
- Reporting/Analytics

From a data standpoint, the following minimum data points are ideal if available:

- PMS Reservation Number
- CRS/IBE Reservation Number
- Share Reservation Number
- PMS Confirmation Number
- Cancellation Number
- Cancellation Reason Code
- Reservation Status Code
- PMS Profile ID
- Group Code
- Corporate Code
- Travel Agency Code
- Member Number
- Reservation Booking Date
- Arrival Date
- Departure Date
- Cancellation Date
- Expected Arrival Time
- Length of Stay (can also be derived from Arrival and Departure)
- Number of Rooms
- Booked Room Type
- Market Segment Code
- Booking Source Code
- Rate/Package Code
- ADR (if summarized on Reservation header)
- Number of Adults
- Number of Children
- Total Revenue (if summarized on Reservation header)
- Total Room Revenue (if summarized on Reservation header)
- Total F&B Revenue (if summarized on Reservation header)

The previous data points will allow a hotel to start building a guest & customer score. Other sections in this document will cover additional data to integrate with the CRM.

2.4.3 Reservation Nightly Breakout

Many guest reservations contain different data values on different nights of the stay. Examples are when a guest changes rooms during the stay, the rate code and/or room rate changes during the stay or part of the stay is group-related while other parts are transient. It is important to get a real/precise nightly breakout of the reservation if it is available in the given PMS data model. This is particularly valuable for confirmation emails and precision of reporting. Even if a nightly breakout is not available, it can be derived from the reservation header/master record by creating a record for each night of the stay.

From a data standpoint, the following minimum data points are ideal if available:

- PMS Reservation Number
- Group Code
- Occupancy/In-House Date
- Room Number
- Room Type
- Rate Code
- Market Segment Code
- Room Rate

Some third-party companies do not send over the same data, even if from the same data source. Until a CRM system has access to consistent data on a guest, marketing and guest services will be limited with personalization. **Any integration effort should focus on required data fields as a business issue, not a technical issue.**

2.5 Guest Preference Collection

The data collected from third-party systems can be used for guest recognition and guest service. This information is core to the personalized guest experience. 3rd party system data may include, but is not limited to:

- Web-data / cookies
- Review sites information
- PMS data collection
- Identification of key PMS data
- Preferred communication methods
- Comments, remarks, financial transactions, folio postings
- Food and Beverage Consumption
- Guest satisfaction scores

While significant guest related data is available, hoteliers should be mindful of guest privacy and regulatory issues related to guest data collection and retention. More information can be found in the GDPR for Hospitality framework here, produced by HTNG in March 2018. GDPR greatly strengthens an individual's rights and requires companies to be clear and transparent as to how they are using a guest's data. In addition, a guest has a right to object to their data being processed and also to have it erased in certain circumstances.

Hospitality companies may use this data to create targeted email campaigns that will:

- Fill rooms: For example, an early spring at a northern resort may mean that golf opens earlier than anticipated. The hotel is looking at warm temperatures this weekend, so the hotel will send out an email promotion to people within a 150-mile radius who have stayed and played golf before. The hotel will try to get 40 more room nights than budgeted for this weekend due to the warm weather.
- Promote the local restaurant, spa and more
- Create personalized (sometimes called dynamic content) transactional email offers, confirmations, pre-stay emails and thank you emails
- Generate targeted onsite promotional messaging to increase guest spend
- Use data to assign rooms they prefer, if available
- Reward loyalty members
- Push guests to high-value areas of the hotel

3 Market Demographics and Segmentation

Targeted marketing starts with gaining insight. CRM solutions should have built-in rich business intelligence (BI) tools or interfaces to leading BI solutions that allow a property to run its own queries.

The following are strategies to improve marketing analytics:

- Improve the quality of your e-marketing data by continuously evaluating new data sources

- Use each email campaign to measure the results and effectiveness of the campaign based on ROI

- Create a data hygiene cycle that automatically records all opt-out, unsubscribe, invalid and null emails as a result of the email campaign

- Tag email campaigns with tracking pixels that log the recipient's actions based on the email (open, click through, purchase, etc.) so the data records show the guest's propensity to react as expected (desired) based on the content and call to action defined in the email

- Use data as a sampling for A/B testing on marketing messaging, content, design layout and offer "stickiness"

- Engage recipients with the opportunity to provide feedback from the email by allowing them to click on/off preferences or send a link to a quick survey about the email campaign and relevance

Marketing demographics and segmentation can both be used to amplify tailored messaging to prospective and current guests. Following the above strategies will enable the hotel to harness the abilities of a modern CRM & BI system.

3.1 Self-Reported Demographics

In this day and age of hyper-security, it can be hard to get people to share data about themselves; however, people are not as reluctant to share information if:

- **They are rewarded for doing so** - offers of 'answer this survey for a complimentary drink/breakfast/upgrade' may resut in more surveys answered in detail and guests thinking of your organization the next time they are booking a stay
- They know they will receive a **tailored experience**

Hospitality companies should leverage direct communications with a guest through personal interactions, social media, and other forums as new sources of information, rather than depending on surveys and other traditional forms of guest preference gathering techniques. These methods carry a higher success rate than legacy approaches.

3.2 Other demographics

Use a persona analysis or look-alike model (sometimes called predicitive analytics or machine learning) by searching for look-alikes to your frequent business guests and sending them an offer based upon what the guest prefers (upgraded Wi-Fi, spa treatments, etc.). Aggregate data trending & analysis through predictive modeling, analytics, machine learning and other new technologies are becoming central to personalizing the guest stay, and ultimately increasing revenue.

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An example model may be based on the business rules of the hotel or group. The entirety of the singular guest profile is used as an input to the creation of the predictive model. The end result details the present value and the predicted lifetime value of each guest on an individual basis.

. This may include:

- Demographics
- Transaction History
- Cart Abandonment
- Web Analytics

- Social Data
- Preference Data
- Guest Satisfaction
- E-Marketing Performance

An example use case may include identification of guest profiles whose lifetime value is predicted to decrease and send them a re-engagement email offer.

3.3 Guest value score(s)

A guest score is a value that a particular guest holds to a brand, chain or individual hotel. In brands, this score can be considered as a two-prong equation calculated from the lifetime value of the guest to the enterprise as a combination of all "stores" or locations purchased, frequency of business and recency since last interaction. On the local level, for purposes of service and personalization, the guest is calculated on specific values (sometimes called Recency, Frequency and Monetary (RFM) values) as it pertains to each location. Therefore, the same guest may hold a unique score in each location and a master score at the enterprise level.

Guest scoring allows individual hotels to craft personalized offers, communication and services to guests based on the preferences and shopping behaviors observed and recorded in the CRM system. When the CRM system is intelligent enough to learn and record the guest shopping behavior based on the content of the message or the offer, the guest scoring can also drive predictive modeling and data trends for the hotels to use as leverage for smarter marketing.

At the enterprise level, guest scoring is leveraged as a source of macro data and business intelligence. These scores drive higher returns on ad spend and define trends that use this data to expand marketing profile and behavioral data. Guest scoring can also serve as the foundation of higher customization in communications and advertising strategies, both traditional and digital.

Being able to score the guest based on several criteria allows an organization to take into account not just room rate or number of nights, but also how frequently the guest stays (a single stay of seven nights versus one night every month for the year), what their total spend is (are they just paying for the room or are they using the outlets and services of the hotel), and what do they think (a guest who gives consistently high scores on survey sites versus one who either gives low scores or doesn't say anything at all). Gathering information in this form can allow us to better evaluate long term relationships with corporate clients as well as determine which guests to upgrade to gain the most value in return.

Recency, Frequency, Monetary, Opinion, and Duration (RFMOD) are important data points to consider when determining the potential impact & value of a guest to the hotel, group and brand.

- *Recency*: last stay – based on when the guest last stayed
- *Frequency*: based on total number of stays
- *Monetary*: total guest spend
- *Opinion*: Based on survey response score(s)
- *Duration*: Average length of stay (one person who stays 10 nights may be more or less valuable than someone who had 10 one-night stays)

3.4 Cornerstones of Effective Marketing

It's not so much about big data as it is about "smart data," which means that marketers need to use the data collected to communicate with relevance to their guests and prospects. Marketing dollars are spent more effectively when one-on-one personalized and targeted messages are delivered, but it requires access to as much data as possible.

This will require segmenting the data, both manually through ad-hoc queries and automatically through business intelligence of machine learning and predictive analytics. If you can determine which segment of the customer base will respond best to the message (who is most likely to "buy" the offer), customer acquisitions costs may be reduced and overall efficiency is improved.

This approach helps to:
- Increase profitability
- Increase the conversion ratio
- Increase customer satisfaction by reducing unwanted contact
- Increase operational efficiencies
- Learn what works in each marketing campaign

Figure 2 describes the steps necessary to achieve an effective campaign based on CRM data.

Evaluate New Data Sources ⚙️

Integrations
Prioritize demographics, segmentation and preference data sources.

Develop Guest Value Scores 🏔️

Know your guest
Do you know who the most valuable guest on your property is?

Automate Your Processes 📷

Your CRM should be working 24/7
Systematize your analysis and messaging through business intelligence & machine learning systems.

Operationalize the CRM with Hotel Staff 📣

Teach your staff
Reinforce usage of the CRM as a collection point for all guest contact.

Continuously Evaluate and Adapt 🔊

Your guests are changing
Agility will ensure your CRM produces actionable intelligence.

Figure 2 Building an Effective Campaign

4 Technology Requirements

This section covers the various technology systems integrations of a modern CRM system. HTNG has created many of the technical specifications necessary to integrate these systems,

The below figure describes how various systems integration can lead to an effective CRM profile for customers & guests that can be scaled from a single hotel to a large hospitality brand. Utilizing the systems integrations described in previous sections will yield a complete and actionable CRM profile.

Figure 3 Systems Integration & The CRM

4.1 PMS- Two-way

The two-way integration is important to ensure automated processes, such as upgrading rooms from a pre-stay email (requiring the two-way connection) or amenity/service requests filled out on a pre-stay survey.

For example: Today is Tuesday and a group just cancelled for this weekend and the property needs to fill those rooms. Find all guests that normally book 3- 4 days out, have stayed over a weekend and live within a 500-mile radius of the hotel, and send them a promotional offer.

Other sales data may be leveraged further, such as evaluating companies or event organizers who previously booked group dates/room blocks.

Example: If a hotel needs more group bookings next June, query the CRM for all groups that previously booked in June that booked more than X number of rooms and/or more than X amount of revenue, and send them a targeted email campaign & advise your group sales team.

4.2 Connect to the spa, golf, stores, cabana and other systems

Connecting to these systems can record more transactions and interactions. This approach can be useful for a single itinerary collection (refer to the Single Guest Itinerary Software Specification on this page).

The ability to have information for guests co-exist with the sales team's leads and bookings allows for a well-placed amenity to ensure a large group booking, and makes it able to pro-actively handle a less-than stellar experience before it can negatively impact a corporate sale.

There needs to be a place where leads or lists are managed prior to a booking or for a person to be qualified. Not all CRM's offer this, so an interface to a sales-oriented CRM needs to be addressed. Having the prospect data in the CRM allows for targeted marketing campaigns to convert them from lookers to bookers.

4.3 CRS- Two-way

This is useful for large brands that have multiple PMS providers or other booking sources across a hotel portfolio, and the Central Reservation System (CRS) would be the middle man to share information between the individual hotel system to the centralized CRM. Central Reservations Systems allow hospitality companies to manage booking channels & identify important booking trends.

4.4 POS- One-way

The POS communicates purchases to the CRM system for purchase history. This may be done directly, or through the PMS via folio data. Marketing and other departments now have the ability leverage the CRM system to better tailor a message based upon previous purchases.

For example, if a restaurant is especially slow one week, marketing can query the CRM for:

- Everyone that lives in X radius of property and send them a targeted email campaign

- Promote the restaurant to in-house guests who may not have experienced the restaurant yet during their stay via a preferred communication method

4.5 Survey Systems- Two-way

The ability to record a guest's response to surveys is useful for service recovery opportunities, as well as positive experiences.

A survey system with a two-way interface can provide the ability to:

- Know when a guest has had a particularly memorable stay and incorporate their preferences into their profile to help meet their expectations on future stays.

- See previous guest complaints on the PMS profile (such as being placed near the elevator). This is helpful to the reservations/front desk staff to make sure the guest gets assigned a room away from the elevator.

- Set up triggered communication if a score is below X and/or a negative keyword is detected in the survey. A triggered communication could be an automated email from the general manager, a text message (if they opted in for this) or an alert sent to the general manager so that he/she can call the guest.

4.6 Online Reputation Management Systems

Connect to online reputation management tools to record and ultimately act on comments or online reviews. In addition to guest specific CRM data, these tools help the brand or independent hotel control it's public facing persona.

4.7 Loyalty Systems – Two-way

A loyalty system with a two-way interface can provide the ability to:

- Recognize guests and record activities based on tier/points
- Send triggered marketing emails based upon points and other information

Potential use cases for data received by the loyalty system may include:

- Send a special offer to all loyalty members that meet a certain threshold, such as 10 bookings in a 3 month period
- Automatically send an email to all loyalty members that need to book by X date so their points do not expire (adding a deadline drives booking urgency)
- Automatically send an email to members advising if they have gone up a level

4.8 Guest-Facing Systems

The most common guest-facing systems in a hotel include the guest room TV and tablet.

These systems can be used to:

- Promote restaurant, spa, golf, etc. to increase guest spend
- Pull the data in the CRM to create targeted and personalized messages and send these out based on preferences, previous purchases, activities booked, etc.

One-way beacon technologies or RFID/geo-fencing applications allow the property to do push messaging while the guest is onsite based on their location.

The following are examples on how a hotel can use this technology:

- If a guest is close to the pizza restaurant and it is known on the profile that either they like pizza or they have previously eaten in this restaurant, push a message to him/her about a pizza special.
- If the spa is unexpectedly slow one day, push a message to everyone at the pool about a special discount at a certain time interval

4.9 Website/booking engine integration

The following web-based technologies should be evaluated for use in a modern CRM system. Each of these systems may yield significant amounts of information that can be used to dermine user behavior prior to and after booking.

- Content Management Systems (CMS)
- Collection of activities by web cookie
- RSS event feed (for pre-stay transactional emails)
- Weather feed (for pre-stay transactional emails)
- Web forms
- Booking engine/booking cart abandonment

Potential use cases include:

- On the booking engine, serve up rooms, amenities and a suggested itinerary based upon profile information of the guest.
- Send a targeted booking abandonment email, which may include an incentive

4.10 Guest Messaging Systems

If you communicate or start a chat from a contact record, the message (if you choose) should be reflected against the contact record. This may include guest request or service optimization systems, front desk calls, or other communication mediums. Refer to Section 5 for staff training strategies.

4.11 Wi-Fi login – One-way

Capture email addresses from OTA bookers, since many OTAs do not pass over the email data.

4.12 Social Media- One-way

CRMs may validate a guest's email address and search the web for social profiles that match the email address. This would provide the hotel with snapshots of a guest's social influence and habits (professional associations from LinkedIn, travel behavior or habits from Instagram or Facebook and social influence).

A hotel can use social media to offer incentives to guests who post positive reviews about the property.

4.13 Service delivery and optimization systems

These systems should integrate the guest request for maintenance or service issues in the CRM profile. Integrating these systems will help operationalize the customer profile by:

- Tracking repeated special requests
- Record service issues on a guest profile for service recovery
- Streamlines operations and enhances guest satisfaction by making sure that guest requests are handled promptly and efficiently

4.14 Call Center Systems (phone system)

CallerID lookup via the telephone system in the call center will provide the guest profile on the reservation agent's screen, so the the entire experience is customized to the guest based on past purchases and behavior.

5 Operationalizing the Customer Profile with Hotel Staff

To impact service delivery and improve the guest experience, information must be in the hands of line employees. Using the data, hoteliers can extend a more one-to-one service. For data to be valuable and usable, data quality is key. In order to address this, hoteliers need to address:

1. Data standardization to avoid human error; for the data needed in the CRM, make the fields in the third-party sources mandatory.
2. Avoid having duplicate records by:
   a) Training staff to search for a record before creating a new one
   b) Making sure your systems perform de-duplication

Train staff to review the customer profile during customer interactions. Exceptional service derives from having actionable information available at every touch point, and the ability to gather information based on team member observations. For example, Ms. Green calls room service for tea each afternoon at 3:30 p.m. A property can capture that information and instead called her at 3:20 to see if it would be a good time to bring up her tea. Or, a property can confirm with Mr. Drexel that he wants feather-free bedding at the time of booking rather than having him state his preference *again.*

In order to deliver exceptional guest experiences, hotel staff should have a full appreciation of the guest and his/her needs and preferences. Profile information is crucial in gaining a guest's appreciation and it is important to establish an operational process around how the hotel staff should be leveraging that information. There are three stages to operationalizing the guest profile: segment, act and gain feedback.

Segmentation is the first step in knowing guests even before they arrive. The profile data in a CRM system is multi-faceted and can serve multiple different use cases. In order to maximize the potential of profile data, it has to be segmented based on key attributes to enable different roles within the hotel. For example, stay preferences will be useful to the front desk and house-keeping while booking preferences are more useful to revenue management and digital marketers. Segmenting profiles will help to identify new ways to serve the guests and target offers.

The second step is to delight the guests with personalized **actions**. Data becomes useless if it doesn't convert into a personalized guest experience. Every touchpoint with the guest is an opportunity to delight the customer and make him/her feel special. For example, a loyalty member could be rewarded on their 25th, 50th and 100th stay with an upgrade and an amenity. One such amenity could be a bottle of wine with a bowl of chocolates and almonds. But, it is important to ensure that the guest drinks wine and doesn't have any nut allergy. Otherwise, a good intention will turn into a mere gesture and it will ruin a great opportunity to win a customer over for life. This is where the profile data will be useful to personalize the amenity to meet guests' individual preferences.

Finally, **capture meaningful feedback** at every opportunity with the intention of improving segmentation, and in turn, delivering personalized actions. Check-in and check-out are great times to gather guest sentiment and verbal feedback. For example, if during check-in time a guest doesn't react well to a spa package offer which they purchased in the previous stay, the information should be tracked in the profile so the agent can adapt to constantly changing guest preferences. Similarly, check-out time is an opportunity to provide a fond farewell and extend a warm invitation to return. If during the stay the guest complained about wireless internet access, ensure to address it during check-out time and offer an

amenity for the next stay. Thus, capturing feedback helps to better understand the guest and enables the staff to personalize future experiences.

Figure 3 below illustrates the interconnected nature of an operationalized CRM. Training staff to continuously use and update the guest or customer profile will ensure a personalized experience.

Figure 4 Operationalize the CRM Through Staff & Systems

6 Hospitality Brands & Customer Data Collection

A global guest profile housed in a CRM system (Figure 5) provides value to the brand and the individual hotel.
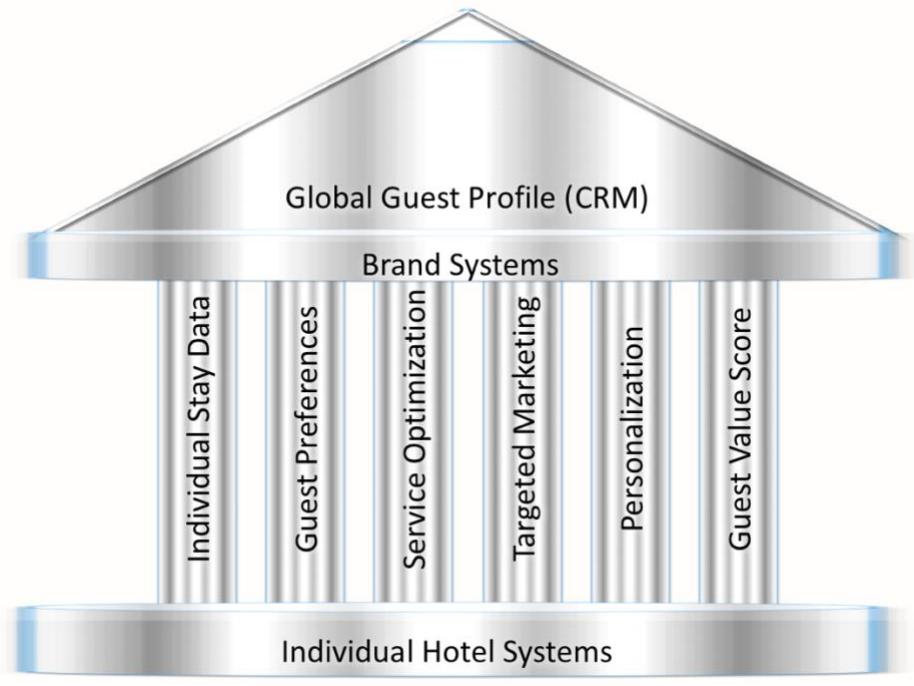

Figure 5 Franchisee & Franchisor Systems Working Together

All guest profile data, especially as it pertains to loyalty programs, is shared across the portfolio with the purpose of enhancing the value of the loyalty program from the guest's perspective. Depending on the brand, there are restrictions surrounding Personally Identifiable Information (PII) as well as credit card data. All of this data is also shared based on the terms and conditions of the loyalty program (and what the guest has opted in to) and the specific terms and conditions of the agreement between the brand and the individual hotel or management company/franchise partner.

The question is, 'Who owns the data?' In many circumstances, all guest profile data is owned by the operating entity of the hotel and provided to the brand as a source of macro data. If the guest is a member of the loyalty program, then the data is primarily owned by the entity governing the loyalty program (usually a department within the brand) and co-owned with each hotel as a guest profile.

Individual hotels and hospitality brands should evaluate the following issues as part of any CRM implementation:

- How do you handle change of franchisees (rebrand or reflag)?
- Loyalty systems vs. individual reservation data ownership
- Information governance policies and contractual obligations
- Jurisdictional requirements and restrictions on international data transfer imposed by legislation such as GDPR

- Ownership vs. the right the use
- Marketing policies & enforcement