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Operationally Enabling **Multichannel Applications**

The hospitality industry has seen a spurt in self-service applications over the last five years. Hotel companies have worked diligently to give their guests the ability to conduct transactions by themselves using kiosks, the Internet and telephone. These initiatives are helping drive two key benefits—empowering guests by giving them control over their destiny, and, at the same time, providing cost savings for hotels by freeing up employees to focus on value-added interactions instead of less valuable normal operational activities. However, these improvements in guest processing are oftentimes disjointed, leaving the industry with the need to ascertain how to best present a seamless experience regardless of the guest interaction channel. For instance, core sets of capabilities should be present in all channels, while at the same time self-service interactions should be transparent and visible across channels, otherwise guest frustration is likely to ensue.

A Multichannel View of Self Service

No different from other enterprise applications, self-service capabilities have evolved to take advantage of advancements in technology that deliver new features and functionality and provide even greater benefits to guests. For instance, the increased availability of mobile devices with Internet browsing capabilities has opened up a new service channel that offers guests the potential to book reservations, check in and out of their hotel rooms, obtain property information, view bills, etc., all while on the go and without requiring direct access to their personal computers. The proliferation of smart phones such as BlackBerry, iPhone and others clearly highlights how important this new channel is likely to be. Given that the pace of innovation and technology adoption is only accelerating, it is crucial for leading enterprises to put in place self-service strategies that both encourage and enable the adoption of new delivery channels as they start gaining popularity among users.

Traditionally, different self-service channels have fallen under the purview of different organizations within the enterprise. For instance, whereas the Web channel is typically managed above property by a central marketing organization, the kiosk channel is usually administered on-property by individual hotel staff. As a result, there is a strong tendency for individual channels to be developed independently of one another, reflecting the priorities of the organizations that own them. This leads to inconsistent functionality across channels, delays in bringing new functionality to market, and a higher overall cost of ownership.

The underlying benefit of looking at self service from a multichannel point of view is the possibility of delivering a seamless customer experience across the many different channels and touch points that a guest interacts with. In our always-connected environment, guest satisfaction is tied to the enterprise's ability to have customers interact with it in a unified manner. There is nothing more frustrating to a guest than having to provide the exact same information multiple times to different people in different places. In a multichannel world, applications are built on a unified platform with common business rules and shared components. Rules, processes and data are shared across channels and remain consistent no matter the touch point, ensuring a uniform experience regardless of the guest's chosen mode of interaction.

Multichannel Best Practices

Through the experience of developing solutions for the travel industry, IBM has been able to identify various key best practices in multichannel application development that have been incorporated into the reference architecture shown below. Key among them is the ability to build a common business logic layer that provides a services-based interface upon which channels can operate. Using SOA (services-oriented architecture) methodologies and tools, the business layer

is designed to provide a common view into enterprise systems and abstract away the complexities inherent within them. Providing a well-defined interface that is built around business processes rather than system boundaries allows for rapid application development and encourages increased business logic reuse across channels.

Another integral component of successful multichannel implementations is the use of lightweight and highly configurable development frameworks. While each channel provides a unique experience, they are nonetheless all following the same overall workflow. As such, many flow control and data entry/retrieval components share common features. These frameworks allow many of these components to be re-purposed from one channel to another with virtually no new development required. As a result, while channels are able to retain their independence from one another, they are nevertheless still able to fully leverage their common features.

Finally, it is critical to recognize and embrace the unique aspects of each channel to provide a superb user experience. The abilities and limitations of each channel provide both a challenge and an opportunity for differentiation. For instance, while mobile devices are not optimal for entering large amounts of data, they are at the same time a personal extension of their owners. As such, personal preferences can be stored directly on the device itself, allowing for it to be retrieved automatically without requiring the guest to type them in. Similarly, the Web channel offers the ability to provide value-added services that personalize the interaction and enhance the guest experience. New technologies like AJAX and FLEX provide the ability to build rich Internet applications (RIA) that can deliver functionality not conceivable before, such as dynamic and multimedia floor plans that are true to physical layout and reflect real-time inventory. Hilton's Homewood Suites' Web-based interactive hotel floor plan for room selection is an example.

Challenges Faced by Multichannel Deployments

Employing a seamless multichannel experience is not without its challenges. Some effort will

Some illustrative changes hotels will have to consider.

Changes to consider	Single-channel self-service environment	Multichannel self-service environment
Self-service application	Presentation view, flow control and business logic are within a single application structure.	Application must be discrete and separated between the presentation and flow/business logic to enable use in a multichannel environment.
Single vs. multiproperty view	Kiosk check-in application is designed around a single user, single-property paradigm.	Application must support concurrent users connecting to multiple properties across a hospitality enterprise.
User interface (UI) characteristics	UI is designed specifically for a touchscreen kiosk.	UIs must be developed to support the Web, kiosks, wireless devices and other channels.
Handling advance checkins	Application assumes the guest is at the hotel and ready to proceed to the room.	Multichannel self-service application and the hotel's PMS must support both real-time arrivals and advance checkin.
Connectivity between hotel Web site and PMS	No real-time connectivity is required between a hotel's Web site and its PMS.	Real-time connectivity is required to support advance checkins from the hotel's Web site.
Room key disbursement	Room keys are dispensed from and encoded by the on-site kiosk.	Based on checkins that occur via different channels, room keys will need to be pre-encoded by the front desk, who must be aware of advanced Web checkins.
Room assignment	Only vacant, unoccupied rooms are assigned.	Support must be provided for the case when a pre-assigned room is still occupied upon arrival.



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be required to ensure that the differences between the channels are accounted for (e.g., mobile has a smaller form factor compared to a Web site). As a result, hotel companies will need to make changes to existing self-service applications and business processes in order to support a seamless multichannel vision, for example a common enterprise PMS with an XML interface that permits data exchange. In some cases, a fundamental shift in operations will be required. Several illustrative changes that hotels will have to consider are described in the table above.

Self-service solutions have helped hotel companies provide enhanced service to their guests. Now it is time for them to take advantage of advancements in technology and bring maturity to multichannel self service. Benefits include a consistent experience regardless of the interaction channel employed by the guest, seamless transfer of information across channels, re-usable assets that will lower the total cost of ownership, and cross-channel transaction transparency. Multichannel solutions will allow hotel companies to extend newer levels of service and functionality to their guests and raise the quality of their experiences and satisfaction.

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