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Practice: Operations & Technology

Topic: Technology

Optimal Hospitality Technology

… We are getting closer, but we're certainly not there yet

By Mark B. Hoare

Making a definitive shift from legacy hospitality technologies that rely on the replication of like-type data across numerous primary business systems to a better, proven approach is still an aspiration rather than a reality. The benefits of such a shift are many but we have not made the meaningful progress already enjoyed by other industries.

As early as 2004, blueprints were formally drawn up for what might be considered an ideal composition of technology systems (services) for the hotel industry. At its core the new approach employs a Service Oriented Architecture (SOA), which consolidates not only the business data that has historically been replicated across multiple separate systems, but also consolidates common replicated services too.

Let's break this down. First, we need to understand why the legacy composition of separate hotel systems and databases came to be.

Back in the 1980's when hotel Property Management Systems (PMS) began automating on-property operations; Front Office, Cashiering, Housekeeping, Guest History, Reservations, etc., the data storage and processing power of the underlying systems had their limits. This led to separate, targeted system solutions (sold by separate vendors) aligned to logical collections of business functions, a PMS, Sales and Catering system, Point of Sale system, Central Reservations system, Loyalty system, Revenue Management system, Back Office Accounting system, to name the primaries.

To couple these systems together, in support of the full guest journey from booking, arriving, dining, staying and departing, interfaces were designed and developed by each of these system vendors to exchange business data between the hotel's chosen collection of systems. Regrettably, interface standards were not prevalent back then and the library of proprietary point-to-point interface specifications ran into the many hundreds, which further exacerbated the inefficiencies and costs of

deploying and maintaining these separate systems. Remarkably, this fragmented best-of-breed approach to system selection and deployment has remained relatively unchanged for decades despite significant technology and communications advances that negate the original scaling and performance problems.

Next, we need to understand how a SOA centric solution would better suit the hotel industry's needs. To help in this, let's cite some current legacy system scenarios. For hotel brand A, a guest makes their booking through the hotel brand's website, as powered by the Central Reservation system, which relies on inventory data and pricing data fed to it by the PMS (two synchronised copies of the inventory and pricing = data replication), and the guest pays the required booking pre-payment by credit card which employs the CRS's payment processing service. A copy of the booking is sent from the CRS to the PMS to await the guest's arrival (two synchronised copies of the same booking = data replication). This guest is a member of the brand's loyalty program, and when making their booking on the website signed into their membership record, as stored and maintained in the CRS to facilitate not having to enter all their personal information and preferences each time they book. To capture the guest's stay and spend information the PMS needs a copy of their loyalty profile too (two synchronized copies of the same profile = data replication). This is just highlighting the overhead of data replication and storage but consider that when the guest booked they paid a deposit which was processed by the CRS payment service, and when the guest checks out and settles their bill it is the PMS payment processing service that gets used, further let's add that the guest, during their stay, dines in the restaurant but elects to pay for the meal by credit card rather than charging the meal to their room account. (three payment processing services involved, CRS, PMS and POS = service replication). Just to cap this example off, each of the three mentioned systems all require data administration to maintain all the reference data needed in support of their respective functions. This data administration may well be performed by the same hotel employee who needs to have a User Profile in each system and must sign-in (authenticate) separately to each, which is an illustration of both redundant data replication and redundant service replication.

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Now let's consider the following: In a SOA solution there is one Booking database, one Inventory and Pricing database, one Guest Profile database, one User Profile database and there is one shared Booking service, one shared Payment service, one shared Profile service, and one shared User authentication service. The efficiencies and benefits of not having to synchronise & replicate data between separate systems and not having to operate multiple services that do the very same thing are somewhat obvious and it therefore begs the question why the SOA approach has not been deployed before now, and extensively.

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The understandable answer perhaps lies not the design and creation of such a consolidated SOA-based offering, as the viable blue-print has been available for nearly twenty years, but rather the ability of the hotel company to 'transition' from current legacy-state to future SOA-state. You simply can't do a big-bang migration of such a magnitude. Even if a hotel company was prepared to endure the operational disruption of a wholesale change to their technologies, they may also have multiple years left to run on one or more of their separate legacy system licenses.

In recent years, several large technology vendors to the hospitality industry have made noteworthy strides toward getting this Service Oriented Architecture solution to market. They appreciate that a) it is long overdue, b) the appropriate technologies and communications now exist at scale; and c) it is a clearly obvious 'need'. However, they are also very conscious of the 'transition' challenges, with the savvier among them investing heavily in their SOA solution's ability to be temporarily backward compatible with individual legacy systems (via open APIs(interfaces)), such that the hotel company can migrate to the end goal of a full SOA solution at their own controlled pace.

Interfaced best-of-breed, standalone systems absolutely served the industry well by fostering and propagating the computerization of most manual hotel operational and hotel distribution functions, but the time for us to make the transition from interfaced, best-of-breed systems in earnest, is long overdue. ■

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